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## The Railway Charges Hearing

THE hearing of the application by the British Transport Commission for higher charges before the permanent members of the Transport Tribunal, sitting as the Charges Consultative Committee, was continuing when we closed for press. Mr. David Blee, Member of the Railway Executive responsible for commercial matters, has been examined at length and in detail by representatives of a number of trading interests. Naturally, perhaps, the traders and the spokesmen for the State utility undertakings, such as the National Coal Board, the British Electricity Authority, and the Gas Council, have been concerned at the addition to transport charges which success of the application would entail on the traffics in which they are particularly interested. Some endeavour was made to stress the need and justification for exceptional treatment for such traffics as coal and steel, but Mr. Blee made the point very clearly that an emergency application of the present kind was not the occasion for varying fundamentally the present railway rate structure, and that if any changes were to be made in the relative contributions to the

revenue of the Commission from different classes of freight, it should be done at a time when there is a comprehensive re-assessment. It became known also that the Commission had given consideration for some time to the possibility of reducing charges with a view to effecting a greater flow of traffic by rail. During the last two years, exceptional rates and excursion fare facilities have been granted where it has been thought that they would create additional business. It was also suggested that if road transport rates were adjusted upwards, additional traffic might be directed on to the railways. On the other hand, there is no doubt that the Road Transport Executive is still in the process of acquisition and consolidation. It has not reached the stage at which a general increase in the level of road rates can be contemplated, largely because of the numbers of hauliers still outside the control of the Executive.

## Dr. M. M. Loubser

DR. M. M. LOUBSER, whose retirement as Chief Mechanical Engineer of the South African Railways we recorded briefly last week, and of whom a portrait and biography appear elsewhere in this issue, is an engineer with considerable academic qualifications who at the same time has had wide practical experience. After taking a degree at Victoria College, Stellenbosch (now the University of Stellenbosch), he won a bursary for further study overseas, and obtained the Diploma in Engineering of the University of Charlottenburg; and he later lectured in applied mathematics at the Universities of Cape Town, Witwatersrand, and Stellenbosch, the last-named of which recently conferred on him the honorary degree of D.Sc. Dr. Loubser has seen twenty-five years' service with the Mechanical Department of the South African Railways, becoming Assistant Chief Mechanical Engineer in 1936, and Chief Mechanical Engineer in 1939. The "S-1" class shunting locomotive, twelve of which type are being built at the Salt River workshops of the Railway Administration, was designed by him, and the "24" class branch-line locomotive was also specially designed by him for service on 45-lb. track.

## Southern Region Staff Conferences

THE staff conferences on the Southern Region, which were inaugurated shortly after nationalisation by Mr. John Elliot, who was then Chief Regional Officer at Waterloo, are to be continued. Mr. Elliot has gone to Euston, but Mr. C. P. Hopkins, who has succeeded him as Chief Regional Officer, Southern Region, already has a good deal of experience in the conduct of conferences of this kind. In Mr. Hopkins' old Region—the North Eastern—four meetings of staff representatives and two of supervisors were held in 1948-49. An address by Mr. W. P. Allen (Member of the Railway Executive) was followed by discussion. The meetings were attended by Mr. Hopkins and Regional Officers. On December 13 last, Mr. Hopkins held at Darlington the first of what he had intended to be a winter series of conferences, run on lines similar to those adopted by the Southern Region. This meeting was very successful, but whether the programme will be proceeded with will depend on the decision of Mr. H. A. Short, who is now Chief Regional Officer of the North Eastern Region. Mr. Hopkins will carry on the Southern Region tradition by having informal conferences at Salisbury, Brighton, and Ashford, on January 24, February 16, and March 15, respectively.

## Small Majority for T.U.C. Wages Policy

THE wages restraint policy of the T.U.C. was discussed at a conference of trade union executives on January 12. Voting showed 4,263,000 in support of the policy and 3,606,000 against. There is not much chance, therefore, that the policy will prove a success in the coming year, though Sir Harold Tewson, General Secretary, showed optimism when he said that some of the unions who had voted against the T.U.C. policy might

yet decide not to press their claims, and he thought it significant also that those unions with most of the lower-paid workers had accepted the wages restraint policy. Among the unions voting for the policy were the R.C.A. and the A.S.L.E.F., but the N.U.R., which recently pressed its claim for a minimum wage of £5 a week, and the A.E.U., which is one of the prime movers in the claim by the Confederation of Shipbuilding and Engineering Unions for an increase of £1 a week, all round, voted against the policy. Sir Harold Tewson, opening the debate, said that total earnings could be increased side by side with productivity at lower costs if wages were related to output. Mr. J. B. Figgins, N.U.R., again complained that the General Council report did not deal with profits.

### Improved Railway Operating Efficiency

SOME reasons for the break in the tradition of fast-running trains built up by British railways in the past, together with an account of the steps being taken to restore the railways to their previous high standard of operating efficiency, were given in a recent issue of *The Times*. The writer of the article referred to points out that in 1939-45 the rate of track renewal dropped from an average of 1,850 miles annually pre-war to 1,485 miles a year, resulting in a substantial accumulation of arrears, but that the rate of renewal had increased to 2,000 miles a year. The difficulties had been countered to some extent by mechanical track work, in which this country is as advanced as any in the world. The article also brings out the point that, with recent advances in locomotive design, motive power available at the present time is certainly capable of repeating the pre-war achievements in speed even with the greatly increased maximum load of 500 tons. Future policy as regards high speeds, however, might be less spectacular than before, and the view was now gaining ground that it was better to provide a high average service than a few exceptionally fast trains.

### Overseas Railway Traffics

TRAFFICS of the Peruvian Corporation continue to show increases compared with last year and the aggregate of \$33,795,958 for the 26 weeks of the current year represent an increase of \$11,248,527. For October, Salvador traffics showed a decrease of £14,000, and of £16,000 for the 17 weeks of this year. Bansi Light receipts were up by £4,425 in December, making the aggregate increase £19,875 for the 39 weeks of the year. Antofagasta (Chili) & Bolivia traffics for the week ended January 8 were £51,560, which represented a decrease of £9,840. Paraguay Central traffics aggregate £3,735,127, an increase of £1,030,031, for the 26 weeks ended December 30. In October, Nigerian Railway traffics totalled £632,907, or £115,113 more than the corresponding period of the previous year, the aggregate total of £3,360,709 for the 30 weeks was £216,792 up. La Guaira & Caracas showed a loss of \$11,002 at the end of the year, the aggregate for the 52 weeks being \$1,262,514; the monthly total for December was \$95,154, a decrease of \$20,009.

### Mexican Port Developed by a New Pier

PROGRESO, on the north coast of the Yucatan peninsula in Mexico, is the principal Yucatan port for sisal hemp export and for general imports. The railway system of this Mexican province centres on Merida, from which two lines run to Progreso. Unfortunately, this port has no natural facilities, as the shore is gradually shelving, mostly at about 1 in 1,000. The sea bed is of limestone, overlaid for a few hundred feet from the shore only by sand. Beyond, there is a consistently strong current from east to west parallel to the shore, normally allowing of no sand settlement. There was thus no question of any dredging, and hitherto most of the sisal has had to be shipped in lighters to ocean-going vessels anchored several miles from the coast. To facilitate export and import shipments it was decided, in 1935, to build a pier of sufficient length to carry rail and road traffic out to a point at which vessels

drawing up to 17 ft. or 18 ft. could come alongside. As described elsewhere in this issue, this pier has now been built, and is 6,420 ft. in length, or 1½ miles, and of unorthodox design, namely, mass-concrete twin-cylinder piers carrying concrete arching. It was constructed on the assembly-line principle and altogether is of unusual interest.

### Daylight Expresses in New Zealand

ELSEWHERE in this issue are given some details of the trial runs which took place last October of daylight expresses between Auckland and Wellington, restoring a service which was withdrawn early in the war. On one of the runs, the 425 miles were covered in 13 hr. 35 min., with departure from Wellington at 8 a.m. and arrival at Auckland at 9.35 p.m., which, it is understood, is the fastest timing yet and is more than an hour faster than the best pre-war timing. The load was kept down to seven vehicles, and the locomotives used were "K" and "Ka" class 4-8-4s, except for a "J" class 4-8-2 and an "Ab" class 4-6-2 on two easier sections. There are long sections of gradients at 1 in 50-70, so the main feature of the runs was the accelerated climbing, rather than sustained high speed, although on one level stretch a top speed of 64 m.p.h. was touched. The longest halts were necessitated by the desire to find a convenient path for the trains, avoiding dislocation of the ordinary service. A regular thrice-weekly daylight service between Auckland and Wellington appears in the timetable this month, so that, with the "Limited" expresses from Christchurch to Invercargill introduced last year, New Zealand now has accelerated expresses between the chief cities of both its islands.

### Education and Training of Railway Staff

IN a talk on "Education and Training" to the Railway Students' Association on January 11, Mr. W. P. Allen, Member of the Railway Executive, gave a good indication of the importance placed on this aspect of staff welfare by the Executive. He pointed out that efficient education and training not only equipped a man for promotion and enabled him to perform his duties competently, but also fostered a pride and interest in the service, which he admitted was largely lacking today. Consideration to the problem was given some months ago by the Railway Executive, and a booklet "Staff Training and Education" had been prepared. Many of the suggestions it contained were a continuance of schemes and courses promoted by the former main-line companies, but in pursuance of the provisions of the Transport Act of 1947 these now could be extended and improved. Mr. Allen stressed the needs of the young man immediately he entered the service. As well as being approached personally by a senior officer, he would be given a booklet, now being produced, about the railway service and the facilities at his disposal. The schemes in view would not create more posts but would give equal opportunity.

### Narrow-Gauge Locomotives for India

AN order for three main-line 2-8-2 locomotives for the Bansi Light Railway has been completed by the Hunslet Engine Co. Ltd. The design of the engines, which are required for heavy freight traffic, is in conformity with the Mikado locomotives already operating on the railway, and is a continuance of the policy of standardisation adopted by the administration for many years. Restricted axle loading, so characteristic of narrow-gauge railways, is a feature of the design, the axle load being restricted to a maximum of seven tons. The locomotives, which are superheated, with a boiler pressure of 160 lb. per sq. in., have an axle load of 6.8 tons, and develop a tractive effort of 17,300 lb. at 85 per cent. boiler pressure. Owing to bad water, the locomotives have been fitted with a Hulburd mechanical boiler cleaner, and the boiler is interchangeable with the 4-6-4 class locomotives now in service. The central buffing and drawgear has automatic radiating gear with sufficient play for 150-ft. curves. Further reference is made elsewhere in this issue.

## British Transport Commission Traffic Receipts

MUCH of the interest which otherwise would have attached to the recently issued details of traffic receipts by the British Transport Commission, has been detracted from by the fact that the proceedings before the Charges Consultative Committee have included estimates of net receipts for the year 1949. The latest traffic receipts cover the 52 weeks of last year and show a total fall of £10,306,000 as compared with 1948. The actual figures were £414,517,000 in 1949 as compared with £424,823,000 in 1948.

During the final four weeks of the year railway gross receipts showed a decline of £1,907,000. It would appear that passenger travel at Christmas last year compared unfavourably with similar movements in 1948, for revenue from passengers, at £7,943,000, declined in the later period by £316,000. Earnings from parcels by passenger train were reduced by £67,000 to £2,183,000. The heaviest decline was in merchandise and livestock revenue, which fell by £983,000 to £5,669,000. Coal and coke receipts were £388,000 less at £5,096,000, and minerals brought in £153,000 less at £2,247,000.

Provincial and Scottish road passenger transport produced a gross revenue of £2,314,000 or £76,000 more than in a similar period of 1948, but London Transport receipts total were £56,000 worse at £4,190,000. In the London area buses and coaches produced £2,276,000, or £17,000 more than in the four weeks of 1948, but there were declines of £57,000 on the railways to £1,104,000 and of £16,000 to £810,000 on trolleybuses and trams.

On balance, Inland Waterways showed an improvement of £4,000 at £111,000; tolls were down by £3,000 at £51,000 but freight charges brought in £7,000 more at £60,000.

	Four weeks to January 1		Incr. or decr.	Aggregate to January 1		Incr. or decr.
	1949-50	1948		1949-50	1948	
	£000	£000	£000	£000	£000	£000
<b>British Railways—</b>						
Passengers ...	7,943	8,259	— 316	113,583	122,244	— 8,661
Parcels, etc., by passenger train ...	2,183	2,250	— 67	28,956	29,267	— 311
Merchandise & livestock ...	5,669	6,652	— 983	81,313	84,998	— 3,685
Minerals ...	2,247	2,400	— 153	29,558	29,143	— 415
Coal & coke ...	5,096	5,484	— 388	67,911	66,198	— 1,713
	23,138	25,045	— 1,907	321,321	331,850	— 10,529
<b>Road Passenger Transport—</b>						
Provincial & Scottish—						
Buses, coaches & trolley-buses ...	2,314	2,238	76	35,134	34,325	799
<b>London Transport—</b>						
Railways ...	1,104	1,161	— 57	14,340	14,617	— 277
Buses & coaches ...	2,276	2,259	17	31,288	31,463	— 175
Trolleybuses & trams ...	810	826	— 16	10,916	11,205	— 289
	4,190	4,246	— 56	56,544	57,285	— 741
<b>Inland Waterways—</b>						
Tolls ...	51	54	— 3	679	694	— 15
Freight charges, etc. ...	60	53	7	839	659	180
	111	107	4	1,518	1,353	165
<b>Total ...</b>	<b>29,753</b>	<b>31,636</b>	<b>— 1,883</b>	<b>414,517</b>	<b>424,823</b>	<b>— 10,306</b>

Some indication of the manner in which costs have been rising on the railway may be gathered from the fact that the estimated deficit in net revenue of some £20,000,000 for 1949, compares with a loss of £10,529,000 in railway gross receipts. By far the largest decline, £8,661,000, has occurred in passenger revenues, which lends point to the contention made on behalf of the British Transport Commission before the Charges Consultative Committee that little purpose would be served from the point of view of increasing receipts by raising passenger fares. Merchandise and livestock takings have declined by £3,685,000 and parcels by passenger train by £311,000. Coal and coke and mineral traffics are the only categories to show improvements as compared with 1948. The former

traffics record an advance of £1,713,000 and the latter of £415,000.

Over the year, there has been an improvement of £799,000 in gross receipts from provincial and Scottish road passenger transport. This is all but offset by decline of £741,000 in London Transport receipts, and Inland Waterways on balance were able to produce only £165,000 more than the previous year.

## British Railways and Economic Recovery

MR. KENNETH H. JOHNSTON, who was a member of the Transport Committee of the Liberal Party of which Mr. B. Seebom Rowntree was Chairman, has published his views on transport in a book\* covering nationalisation and the possibilities now opened up, electrification, and a comparison of British and foreign railways. Overlapping between the three sections, together with a considerable amount of repetition, makes the book somewhat difficult to read, but the gist of his argument is given below.

Mr. Johnston is convinced that because of their commercial basis the former railway companies failed badly to serve the State. Though wholeheartedly in favour of State railways he rejects the idea that they should pay their way. The true criterion of efficiency, he says, should depend on whether working costs are kept as inexpensive as possible. The fixing of charges should be left to impartial economic experts, and any loss arising from low scales of charges would be reimbursed through improved national health, impetus to trade, and in other indirect ways.

The cure he suggests for our transport ills is to electrify the railways on a wholesale scale, and in support of this opinion he calculates that the return on the cost of a general conversion of main lines would be probably more than double the 7 per cent. suggested in the Weir Report, 1931. However, as a preliminary experiment, the existing main lines from London to large towns should be electrified and remodelled with a larger loading gauge. Quite a comprehensive scheme on these lines could be carried through in from two to three years. In the same emphatic style Mr. Johnston asserts that diesel-electric traction "affords economic advantages over track electrification only where the frequency of the trains is very low." If that were correct, the Pennsylvania Railroad would not have preferred diesel traction to electrification on its main line west of Harrisburg, which carries a heavy freight and passenger traffic over stiff gradients. So little is known about this form of motive power in Great Britain that a team of technicians and workmen went to the United States early this year to study the production methods of the diesel locomotive industry in that country.

The passing of the Transport Act, 1947, renders superfluous the large portion of the book which re-states old arguments in favour of nationalisation. Everywhere today transport operates in a new environment. Changes take place rapidly and comparisons between British and foreign railways are useless unless they cover the last two years. Mr. Johnston quotes statistics down to 1947 to prove that American railway charges are low. He does not add, however, that seven cumulative increases in freight rates were made between June, 1946, and the end of 1948. Further adjustments in 1949 raised the rate level by about 57 per cent. Passenger fares also have been increased recently more than once, until in the Eastern District they are 69 per cent. above 1941, with a basic fare of 3-375 cents a mile in coaches and 4-5 cents a mile in parlour and sleeping cars. Having regard to the length of American journeys these fares do not represent cheap travel.

Though Mr. Johnston must have spent much time and labour in preparing his book, one feels that it does not contain any suggestions which are practicable in existing conditions. His views might have received attention if he had put them forward in a judicial manner; instead, he writes with bias throughout, and immoderately at times,

\* "British Railways and Economic Recovery." A Sociological Study of the Transport Problem. By Kenneth H. Johnston. London: Clerke & Cokeran Limited, 72-78, Fleet Street, E.C.4. Price 18s.



as when he refers to "the squalid atmosphere in which the road-rail controversy was conducted," or declares that "the railways under private control obviously presented an extreme case of industrial psychopathology."

### Nyasaland Railways Limited

IN the report for the year ended December 31, 1948, of the Nyasaland Railways Limited and of its subsidiary, the Central Africa Railway Co. Ltd., of which Mr. W. M. Codrington is Chairman, the results of the working of the railway are shown as: gross receipts £336,111, as opposed to £325,839 for 1947, and working expenses £251,403, against £235,656, leaving a balance of £84,708, against £90,183. This, after addition of £10,500 dividend from the subsidiary company, and of interest on subsidiary company debentures, Trans-Zambesia Railway income bonds, and the balance from 1947, gives £112,750; of this, £18,735 is interest on 5 per cent. "A" debenture, £20,300 interest on 3½ per cent. first debenture, and £13,177 interest on 5 per cent. bridge debenture stock, and deduction of £59,675 in respect of taxation leaves a balance of £863, which the directors propose to carry forward.

The following are some of the principal results for the Nyasaland Railways, excluding, that is, the Central Africa Railway:—

	1947	1948
Goods tonnage ... ..	132,808	136,274
Passenger journeys ... ..	317,590	305,249
	£	£
Goods receipts ... ..	243,472	258,508
Livestock and vehicle receipts ... ..	3,182	1,838
Passenger receipts ... ..	57,006	54,670
Parcels and baggage receipts ... ..	5,324	5,279
Gross receipts ... ..	325,839	336,111

At the annual general meeting on December 30, the Chairman said that the increase in goods traffic was due not only to good crop traffics, but to continuance of a considerable import traffic of commodities required for post-war rehabilitation. Tea, cotton, and tobacco, the main crops, showed increases, but other agricultural products conveyed had not increased, despite low developmental rates. Expenditure rose under almost all heads, due mainly to the increased cost of stores, and, to a lesser extent, to wage increases.

Good progress was made with the Chiromo bridge over the Shire river, which was expected to be complete in January, 1950. An order had been placed jointly with the Trans-Zambesia Railway for eleven 2-8-2 type engines, of which two were in service and the rest due for delivery from Britain by the end of 1949. Fifty wagons had been delivered, and a further 50 ordered. A new ship for Lake Nyasa and a new floating dock were being delivered in sections from Britain. No new passenger coaches had been placed in service, owing to restricted manufacturing capacity and the priority of goods vehicles. Telecommunications were being improved in expectation of increased traffics. In March, 1949, Sir James Milne had visited the railway and discussed implementation of the companies' policy with the chief officers.

In 1949, Nyasaland suffered from drought, which caused not only a reduction in exports, but traffic congestion resulting from despatches of maize for famine relief. As to the future, the injection into Nyasaland of considerable sums by H.M. Government, combined with investments of privately owned capital, might perhaps cause slight inflation. Much of the expenditure would yield a dividend only in the future; meanwhile, resultant increases in the cost of administration of the colony would be borne by those who lived, produced, and did business there.

The African population was said to be growing rapidly, but production did not noticeably increase. Cotton and groundnut traffics were disappointing, and the famine of 1949 showed how small were the reserves of food grown. The problem was mainly how to encourage the African to play his part in production. The post-war period of honeymoon finance, stated Mr. Codrington, was over; controls were being reduced or abolished, and administrative expenditure pruned. Reduction of expenditure, combined with increased production, was the only alternative to a reduced standard of living.

### Commercial Train Services—London and Manchester

THE journey from Manchester to London and back, 360 miles by the shortest route, was probably the first of comparable length to be made regularly in both directions in one day. Manchester business men in the 'nineties were great travellers. Apart from their daily residential journeys from Blackpool, Buxton, and Southport, many came daily from Windermere, often after a three-mile drive to the station, at 8.10 a.m., due at Manchester Exchange, 83 miles, at 10.30, and returned at 4.15 p.m., as well as from the North Wales coast by the 8 a.m. from Llandudno (88 miles to Manchester in 2 hr. 10 min.), returning at 4.5 p.m., considerably longer than any "dormitory" journey then made regularly to and from London.

In 1895, the 7.10 a.m. from Manchester Central and the 8.30 a.m. from London Road, then due at St. Pancras and Euston at 11.55 a.m. and 12.55 p.m., respectively, were regularly used by business men, who could return from St. Pancras at 4 p.m. and 5 p.m., or from Euston at 4 p.m. or 5.30 p.m. Although the down morning service was not so good, a double journey from the London end was quite common by the 8.30 a.m. or 10.5 a.m. from St. Pancras or 10.10 a.m. from Euston, with return trains from Manchester at 5.20 p.m. or 5.30 p.m. The London & North Western 8.30 a.m. from Manchester and 4 p.m. from Euston, which, with the noon service in each direction, used the North Staffordshire route via Macclesfield and Stoke to Colwich, were then regularly worked by the 6 ft. 6 in. 2-4-0 "Precedent" *Charles Dickens*. This engine, built in 1882, was credited with the huge mileage of 2,300,000 when scrapped in 1912, and was working the up train successfully even after the accelerations of June, 1902, when it was booked over the 116½ miles from Lichfield to Euston in 125 min.

June, 1902, may be taken as our commencing date for express services between London and Manchester, when the London & North Western broke the agreement which had fixed 4½ hr. as the minimum journey time—it had, however, been offering one service in 4 hr. 10 min. to Manchester by the 8.30 a.m. "Irish Mail" from Euston, with a change at Crewe—and began to do the 188½ miles journey in 3½ hr. The Midland St. Pancras and Manchester trains, which had been doing the journey via Marple to Manchester Central in 4½ hr. and 4 hr. 20 min. (one 4½ hr. train actually ran via Nottingham, and stood there 10 min.) and to Manchester Victoria in 4 hr. 17 min., began in July, 1902, to use the direct line from New Mills Junction to Heaton Mersey, avoiding Marple and Stockport, and gave services to and from Manchester Central in 3 hr. 50 min., and in July, 1904, the Euston and Manchester London Road time came down to 3½ hr. by trains running non-stop between Euston and Stockport, 183 miles in 198 min. The best Midland time, from the same date, was 3 hr. 35 min., with one stop at Leicester, though this was soon increased to 3 hr. 38 min. and 3 hr. 40 min., and remained at the latter figure till the 1914 war.

The opening in March, 1899, of the Great Central route to Marylebone did nothing to improve the London and Manchester services. Indeed, it worsened them, for even after the consolidation of the new line (in the summer of 1901, for instance) the best Marylebone and Manchester London Road times were 4 hr. 50 min. down and 4 hr. 43 min. up. By the old Great Northern route via Retford, the "special express" to Manchester in 4½ hr., calling at Grantham, Sheffield, and Guide Bridge, which had been a feature of the 'nineties, had dropped back in 1899 to best times of 4 hr. 27 min. down and 4½ hr. up, and most services from Kings Cross to Sheffield and beyond ran via Nottingham Victoria and the new Great Central line. In 1904, the Great Central advertised a service in 3 hr. 50 min. from Marylebone to Manchester London Road, and did the up journey from Manchester Central in 4 hr. 5 min.; but these times were soon increased, and although in July, 1905, the Great Northern ran a 6.10 p.m. from Kings Cross via Retford to Manchester Central in 4 hr., with a corresponding up train in 4 hr. 11 min., and maintained a 4 hr.



9 min. up service with Sheffield and Grantham stops until the autumn of 1907 (when the Kings Cross and Manchester service virtually terminated), the Euston and St. Pancras routes had almost a monopoly of London and Manchester traffic up to the 1914 war. The opening in May, 1909, of the London & North Western Styal line from Wilmslow, avoiding Stockport, decreased the distance to Manchester via Crewe by only 30 ch., but this development did not affect the services.

During the first world war, the shortest time of  $4\frac{1}{2}$  hr. between London and Manchester enabled Great Central times to come so near to those of their rivals that the Great Central acquired a large share of the Manchester traffic, and retained some of it during the troubled period between 1919 and 1923. After grouping, however, many changes took place. In April, 1923, a  $3\frac{1}{2}$ -hr. Euston and Manchester schedule was restored with many other improvements—a down morning service ran from Euston to Manchester via Stoke in 3 hr. 50 min.—but the St. Pancras trains began to deteriorate in favour of the Euston route, with no timing faster than 4 hr. A through Midland Division service for East Lancashire via Manchester Victoria was inaugurated in 1920 but withdrawn in May, 1924. The only notable change on the London & North Eastern was a new first-and-third class Pullman train with supplements of 7s. 6d. and 4s. from April to September, 1925. It left Manchester Central at 9.50 a.m. and returned from Kings Cross at 6.5 p.m. on a schedule of 4 hr. 10 min., but was not popular. The 4.55 p.m. from Marylebone, previously a Sheffield train, was accelerated from January 1, 1930, to reach Manchester London Road in 4 hr. 10 min., and in 4 hr. 5 min. from May, 1932.

Euston, however, inaugurated its  $3\frac{1}{2}$ -hr. service in July, 1932, and made many other accelerations, and the Midland Division improvements in September, 1937, gave expresses between St. Pancras and Manchester in 3 hr. 35 min. with two, and in 3 hr. 40 min. with three intermediate stops, surpassing their efforts of July, 1904. The greater part of the Manchester business passed from Euston and St. Pancras, in shares of about 65 and 35 per cent. The Midland Division September, 1937, service had, however, begun to deteriorate by 1939, and one up train in 3 hr. 38 min. at 6.20 p.m. from Manchester Central was withdrawn in July of that year. This had been put on to relieve the very heavy  $3\frac{1}{2}$ -hr. train at 5.45 p.m. from Manchester London Road to Euston, but its departure time was too late for business traffic. Business has always finished early in Manchester; the first London & North Western  $3\frac{1}{2}$ -hr. up service of 1904 left London Road at 4.10 p.m., and the best loaded of the old Midland expresses was the pre-war 4.15 p.m., afterwards 4.35 p.m., and now put forward to 4.5 p.m. and much decelerated.

The 1939 services, set out on this page, had only one serious defect, the lack of a down train from London to reach Manchester in time for business before lunch, though this would have been remedied had the proposed 1939-40 winter service been put into operation. In the up direction, the Midland Division 7.20 a.m., though a 4-hr. train with seven stops, gave business men seven hours in London, and they could have a full afternoon there, lunching in the train, by the 9.45 a.m. from London Road. There were minor faults in the Euston service, such as the lack of a down express serving Stoke between 8.30 a.m. and 2.50 p.m., now remedied by the 9.45 a.m. and 12.15 p.m. departures; on the up journey, successive accelerations and deletion of stops had resulted in there being no through train from Manchester to Rugby between the hours of 8.30 a.m. and 2.20 p.m. The 1939 Midland Division services were adequate; all these services ran via Derby Station instead of via Chaddesden, though, strangely enough, the fastest trains were at noon from each end, not at business hours, and these mid-day trains have now vanished completely, except on Saturdays.

The Great Central route services of 1939 need no comment. The only trains of any value to Manchester were the 3.20 p.m. down and 2.20 p.m. up. The latter, though covered by rival departures at 2 p.m. and 2.20 p.m., was very popular, but has now vanished in favour of a departure

from London Road at 11.30 a.m., which is covered by a 12.5 p.m. departure from London Road to Euston.

The war played havoc with the London and Manchester expresses, and their restoration has been on less complete lines than that of other commercial services. The 1949 timetable on this page throws all London and Manchester traffic on to Euston. The old Midland route now offers five services in each direction, averaging 4 hr. 42 min. down and 4 hr. 48 min. up (increases of 48 and 53 min. over the 1939 average time, compared with increases of 28 and 27 min. in the Euston trains), and, of these five, the 8.15 a.m. from St. Pancras and the 9 a.m. and 5.50 p.m. from Manchester have little commercial value. The only redeeming point of the Midland service is the retention of a 7.15 a.m. up, a 4-hr.35-min. train, which at least reaches London before noon. The Marylebone trains no longer attract Manchester business traffic. It will be interesting to see how far collaboration with the St. Pancras trains can relieve Euston without worsening services to those intermediate towns which are served by both the old Great Central and Midland routes.

Regarding the 1949 Western Division trains of the London Midland Region, the best time of  $3\frac{1}{2}$  hr., now achieved by the 9.45 a.m. up from Manchester, is reasonably good in present conditions, but there should obviously be  $3\frac{1}{2}$ -hr. trains in both directions, morning and evening, and, most necessary of all, a down service to reach Manchester well before noon. Earlier running since May 23 last of the 10.20 a.m. from Euston, at 9.45, has given a full afternoon for business in Manchester, but the lack of an earlier departure from London is a serious drawback. Now that the 11.55 a.m. up from Manchester London Road, which last winter was a semi-fast train via Crewe, has reverted to the Stoke route and, leaving at 12.5 p.m., reaches Euston in 4 hr. instead of 4 hr. 40 min., the rest of the service is adequate, and would carry the traffic quite satisfactorily, if only a Midland Division service were given in 4 or  $4\frac{1}{2}$  hr. In view, however, of the constant references to the overcrowding of the old London & North Western main line with express passenger trains, this route should now be relieved of some of the London and Manchester traffic, and should no longer be required to cater with its Manchester trains for Huddersfield, Halifax, and West Riding business, for which Marylebone could give a good service: future articles will deal more fully with this point.

## LONDON AND MANCHESTER

		1939								
		a.m.	a.m.	a.m.	p.m.	p.m.	p.m.	p.m.	p.m.	p.m.
Euston	dep.	8.30	10.30	11.50	2.50	4.10	6.0	6.0	9.15	9.15
Manchester London Road	arr.	12.18	2.5	3.20	6.45	8.5	9.15	9.15	9.15	9.15
St. Pancras	dep.	8.25	10.30	12.30	2.30	4.30	6.30	6.30	9.10	9.10
Manchester Central	arr.	12.40	2.20	4.8	6.10	8.26	10.27	10.27	10.27	10.27
Marylebone	dep.	8.45	10.0	12.15	3.20	4.55	6.20	6.20	9.10	9.10
Manchester London Road	arr.	1.34	3.17	5.3	7.45	9.50	11.9	11.9	11.9	11.9
Manchester Central	arr.	—	—	—	—	—	—	—	—	—
		1949								
Euston	dep.	8.35	9.45	12.15	2.45	4.0	5.55	5.55	9.50	9.50
Manchester London Road	arr.	1.0	1.45	4.20	6.55	8.15	9.50	9.50	9.50	9.50
St. Pancras	dep.	8.15	10.15	—	2.15	4.15	6.30	6.30	9.10	9.10
Manchester Central	arr.	1.15	2.50	—	6.50	8.55	11.10	11.10	11.10	11.10
Marylebone	dep.	—	—	10.0	—	—	—	—	—	—
Manchester London Road	arr.	—	3.29	5.48	—	8.55	11.56	11.56	11.56	11.56

## MANCHESTER AND LONDON

		1939								
		a.m.	a.m.	p.m.	p.m.	p.m.	p.m.	p.m.	p.m.	p.m.
Manchester London Road dep.	—	8.30	9.45	12.5	2.20	4.10	5.45	5.45	9.0	9.0
Euston	arr.	12.42	1.0	3.40	6.0	7.47	9.0	9.0	9.0	9.0
Manchester Central	dep.	7.20	8.55	10.0	12.25	2.0	4.25	5.50	5.50	5.50
St. Pancras	arr.	11.20	1.0	1.48	4.9	5.50	8.12	9.50	9.50	9.50
Manchester London Road dep.	—	8.20	10.3	—	2.20	3.50	5.0	5.0	9.0	9.0
Marylebone	arr.	1.10	2.55	—	6.38	9.0	9.52	9.52	9.52	9.52
		1949								
Manchester London Road dep.	—	8.35	9.45	12.5	2.5	4.5	5.50	5.50	9.45	9.45
Euston	arr.	1.5	1.30	4.5	6.10	8.10	9.45	9.45	9.45	9.45
Manchester Central	dep.	7.15	9.0	—	1.50	4.5	5.50	5.50	9.45	9.45
St. Pancras	arr.	11.50	2.10	—	6.20	8.45	10.55	10.55	10.55	10.55
Manchester London Road dep.	—	8.25	9.55	11.30	—	3.46	—	—	—	—
Marylebone	arr.	1.58	3.29	4.28	—	9.34	—	—	—	—

## LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

### Large Wagons and Continuous Brakes

December 31

SIR.—The Committee on Standardisation of Engineering Products whose report has recently been published has drawn attention to the benefits likely to result from the use of high-capacity bogie wagons fitted with vacuum brakes, especially for the conveyance of coal and minerals.

These two subjects, high-capacity bogie wagons and continuous brakes for freight trains, have received considerable publicity in your columns. In view of the authoritative summary of the committee, the contentions of those of your correspondents in favour of these modern ideas are proved to be sound.

Perhaps these ideas will be implemented in a practical manner by the National Coal Board and British Railways, thus leading to increased efficiency and reduction of cost, to the benefit of all of us.

G. RICHARD PARKES

90, Serpentine Road, Wallasey

The report to which Mr. Parkes refers was the subject of an editorial article on page 36 of our last week's issue. —Ed., R.G.]

### London Transport Extravagance

January 9

SIR.—Will you allow me to comment on "Metro-Man's" letter in *The Railway Gazette* of December 30.

The London Transport Instruction Train is constructed of cars known as 1919 cars. These were part of an order for 40 cars placed at a time when the normal rolling stock on the tube lines was confined substantially to "indoor" working and was composed of gate stock cars requiring the use of one guard per car, in addition to the driver. The 1919 cars were all trailer cars and were the first new cars built for the predecessors of London Transport in which pneumatically-operated doors were used, and were therefore somewhat experimental. The motive power was provided by twenty of the old gate stock cars converted.

As the cars were intended to run only within the tunnel under track conditions which were very good, the same simple form of bogie was adopted as existed on the other stock then in service and no particular steps were taken to "weatherproof" these cars to the extent which is today necessary with "outdoor" running. The motor coaches with which these trailer cars worked were considerably older and were equally unsuitable for outdoor running. The 1919 stock could therefore not be used for outdoor running on a regular basis but had served its purpose in proving the practicability of pneumatically-operated doors. In addition, the door arrangements were not found very suitable for the expeditious handling of passengers.

All gate-type stock on the tube lines was later replaced by pneumatically-operated door stock, commencing in 1923, and the whole of the rolling stock which was built in 1906 onwards was then scrapped. This procedure showed a considerable economy in the saving of the wages of five men on a six-car train and six men on a seven-car train as, with pneumatically-operated doors, one man could deal with all the door operations.

In addition, some further years of use of these cars arose during some seven years' service on the Bakerloo Line, running indoors between Queens Park and Elephant & Castle, before the introduction of the 1938 tube stock on that line. During this period, the motive power was provided by the use of some surplus pre-1938 air-door equipped motor coaches. The 1919 cars were thereafter retained in possession in the unfulfilled hope that some use could be found for them, and all but the five used for the Instruction Train have been scrapped.

It will be seen therefore that the stock could not have been used on the Woodford-Hainault shuttle service, which is out-of-doors, nor even on the Northern City Line, as, with rearrangements of stock, no motor coaches remained available to haul these trailer cars.

On the general question of the allowable life of rolling stock, two factors enter; one is the extremely hard life of an underground railway car which is required to start and stop every five-eighths of a mile and to carry very heavy over-loads of passengers, and the other is the technical advances which are continuing to be made to improve by modification of rolling stock the capacity of the trains and the line to carry the passengers more quickly and more comfortably.

With regard to station signs, renewal of former Metropolitan Line nameboards has been proceeding steadily, as a normal maintenance item, since the line became part of the London Transport system. When this renewal takes place the standard bar-and-circle London Transport device naturally replaces the original diamond design.

Route diagrams in trains are replaced only when necessary, and the revised Metropolitan Line diagram was produced only when stocks of the previous diagram were exhausted.

Yours faithfully,

GEORGE DODSON-WELLS,  
Chief Public Relations Officer

London Transport Executive, 55, Broadway, S.W.1

### Railway Fares

January 11

SIR.—I have read with interest recent letters in *The Railway Gazette* quoting examples of, and giving suggestions to eliminate, anomalies in the current railway fare structure.

It is, in my opinion, incontestable that to attract more trade the railway must either provide more attractive service or else make its present passenger charges commensurate with the service rendered, in comparison with other transport agencies.

Analysis of the service rendered can be interesting. On occasion it is necessary for me to travel from Exeter to Northampton. I may travel via Western or Southern Regions to London by an excellent service of fast and semi-fast expresses. So far so good.

Now the "crow's flight" mileage from Exeter to Northampton is nearly the same as from Exeter to London. The fare to London is 35s. and to Northampton, 38s. 3d. single third class. For this extra expenditure what have British Railways to offer save inconvenience; the inconvenience of inter-terminal travel; the inconvenience of different main-line timings (which the greatest optimist has never suggested could be inter-connected on a national timetable); and, perhaps greatest of all, the inconvenience caused by loss of valuable time?

Perhaps someone will suggest a more direct route from Exeter via Oxford and Bletchley to Northampton or Oxford and Banbury. If so let him consider the time factor and its inconvenience to those whose business causes them to use British Railways. Exeter to Northampton is a typical cross-country journey on which passengers are penalised by having to pay for extra mileage occupying extra time. Road transport often scores by going more direct more cheaply and in many instances faster.

If railways are to attract more trade, by all means increase passenger receipts by charging more for better and faster service.

May I suggest that the new fare system be a rated system accompanied by a point-to-point "direct" fare structure so that in future the passenger pays for the distance he wishes to travel, not the distance that the railways are compelled to take him?

Furthermore, if our traveller under these new condi-

tions cannot reach his destination at an overall express speed (may I suggest 40 m.p.h.), let him not be charged express rates even if he travels the first stage of his journey at 80 m.p.h.

How far natural geography, as opposed to railway geography, comes into this new structure is a matter of interest. In other words, is the fare from Barnstaple to Swansea to be the same as from Barnstaple to Milverton? Perhaps not, for the Transport Commission, although omnipotent on land, may feel that coastwise boundaries are unaccountable under the present Act.

Yours faithfully,

A. J. PARKES

31, Alphington Street, Exeter

## Railway Wagon Transporters in France

January 2

SIR.—Mr. Cazenave's interesting article on "Railway Wagon Transporters in France," in your issue for December 23, 1949, gives rise to some interesting speculations in so far as concerns the possible application of the same principle to British Railways. For why confine this ingenious method of operation to "badly war-damaged branch lines and sidings entirely cut off from main lines"?

British Railways still possess a respectable stud of horses, and, pending the introduction of sufficient tractors, such animals as could be saved from cartage duties as a result of the extension of the French system to throughout door-to-door transits could be used in hauling the trailers along our Class "A" roads.

This would prove a tremendous boon to our railways and give their traffics a considerable fillip, for, whilst on the one hand the transit time of long distance railborne traffic diverted to this method of conveyance would be little if at all longer than it is now (sad but probably true!), the resultant congestion and delay on the roads to faster moving traffic would eventually drive most of the roadborne traffic (both goods and passenger) back to rail.

Or, if for any unforeseen reason things did not work out that way, all railway wagons could, in the course of time, be handled in this manner, thus putting the railways in a favourable position *vis-à-vis* the road hauliers, in so far as (a) their average "vehicle" capacity would be far greater than the latter's, and (b) all those useless and costly accoutrements such as signalling, permanent way, and station buildings, which at present go to make up a railway, could be entirely dispensed with.

I fancy we are on the threshold of one of the most revolutionary advances ever made in rail transport.

Yours faithfully,

ADAM OF USK

Crickhowell, Breconshire

## 1948 Locomotive Exchanges

January 7

SIR.—I think it is time someone took up the challenge of the anti-Bulleid correspondents. I must first state that I am fortunate enough to serve in the Design Office of the Southern Region and although still prepared to learn from the experience of other railways, am convinced that Mr. Bulleid's work will go down in the annals of railway history as not only revolutionary but as a lead in the badly-needed modernisation of the steam locomotive.

I am the first to admit that there are failings in all the Pacifics but let us take what is to the travelling public the most important point about any locomotive timekeeping. The above mentioned office looks out on Brighton Station, and it is illuminating to see the 10.10 a.m. from Plymouth pull in at 5.22 p.m. dead on the dot every night. This train is hauled all the way by members of "The Armoured Div." It is not a supertitled express, but simply a plain long-distance service, which is keeping an "on time record."

Next we come to the question, "Why so many?" It does not seem to have occurred to some people that Mr. Bulleid envisaged a better Britain after the war, one in which railways would forge ahead, not what we have.

For that reason he prepared locomotives to give faster, more frequent, and improved services.

Now the "Leader." Will those who deplore this "waste of public funds" please look around before they jump on us. I have no need to tell you what the other railways had on the way before nationalisation, but please forgive the Southern for being so slow; we were only trying diesel-mechanical, diesel-electric, double-decker, and also to improve the steam locomotive. Give credit where it is due; the "Leader" is the only serious attempt in existence (I am speaking of post-war building) to get over the inherent failing of steam, and like the jet engine of the war it cannot be expected to be perfect in its first stage. For the special interest of Mr. Maxwell, of Newton Abbot, who writes in your issue of December 23 last, I submit some figures.

The Western Region "King" figures are taken from "Locos of the Royal Road," the "West Country," from one of the often-published diagrams and the "Leader" from a diagram in *The Railway Gazette*. The weight of the "Leader" I have taken as 100 tons as I could find no published figure, and the tractive effort is calculated by comparison with the "West Country."

Class	King	West Country	Leader
Dia. dr. wheel	6 ft. 6 in.	6 ft. 2 in.	5 ft. 1 in.
Tractive effort	40,300	31,000	26,000 lb.
Adhesive weight	89	86	100 tons
Adhesive factor	3.75	4.06	8.6

Now I ask which locomotive will slip under a given set of conditions. Surely slipping is due to many things, including surface conditions, driving methods, and a lot depends on sanding. One of the worst modern locomotives for slipping (theoretically) is the "Schools" Class, and yet I have seen them take eleven heavily loaded from Southampton Central without a sign of a slip.

I could write much more, but to conclude, let me draw your attention to the different conditions for building, maintaining, and operating diesel, electric, and steam. The steam driver still works his locomotive as he did in 1900. Try and get him to change! The electric motorman has the latest methods, and so has the diesel man.

I suggest that anyone interested in steam operation should do what all modern thinking men do—read, or better still, go and see how they do it in America, but remember we are short of dollars so coal is still our main fuel supply.

Yours faithfully,

R. H. THOMAS

77, Princes Road, Brighton 7

## London and South Wales and Bristol Services

January 4

SIR.—Mr. J. Faulkner in his letter on Paddington-Bristol services, in *The Railway Gazette* for December 30 last, mentions that the present 9.15 a.m. Paddington to Bristol and Taunton should be retimed to 9.20 or 9.18 a.m. and give the 9.15 a.m. departure time to the present 9.5 a.m. Paddington to Bristol express. I think this is a good idea as, although the present 9.15 a.m. leaves at the standard Bristol departure time of 15 minutes past, it is not really a Paddington-Bristol service. It appears to run more for the benefit of the intermediate connections it provides, from Oxford at Didcot, at Swindon for the M.S.W.J. line, Chippenham for the Weymouth line, and Bath for the Salisbury and Portsmouth line.

The present 5.5 p.m. Paddington to Bristol and Plymouth should be treated, I think, in the same way as the present 9.5 a.m. and leave at 5.15 p.m.; this would keep it well behind the 4.55 p.m. to Cheltenham, which it sometimes appears to have difficulty in doing at present. The present ridiculous departure time of 5.14 p.m. of the semi-fast to Bristol and Weston could then be altered to 5.18 p.m. This alteration would add yet another standard departure time, at 9.18 a.m., 1.18 p.m., and 5.18 p.m. for the principal intermediate stations to Bristol.

Yours faithfully,

J. F. BURRELL

80, Longmead Avenue, Bristol 7



## The Scrap Heap

The Canadian Pacific Railway has presented the Halifax (Nova Scotia) Press Club with a meeting bell, a copy of the locomotive bell on the train which carried the King and Queen on their 1939 visit to Canada. The bell is similar to that which was presented to the Parliamentary press gallery at Ottawa.

### Hamburg Telephone Service

Anyone in Hamburg who wants to be cheered up will soon be able to hear the latest joke simply by dialling a telephone number. The joke will be told him by a telephone information service beginning next month. Besides jokes, however, the service will provide football results, exchange rates, entertainment programmes, and transport timetables.

### L.M.R. Running Champion

Clerk Arthur Collyer, Euston, London Midland Region, half-mile track champion of Britain, 1937-1938, holder of 18 international vests, and participant in the Olympic Games of 1936, is one of the Hertfordshire team in the 7½-mile inter-county championship to be held at Leicester tomorrow, January 21. It is 13 years since 40-year-old Arthur Collyer last competed in the county championships.

### A Man and a Job

I often tell my people that I don't want any fellow who has a job working for me; what I want is a fellow whom a job has. I want the job to get the fellow and not the fellow to get the job. And I want that job to get hold

of this young man so hard that no matter where he is the job has got him for keeps.

I want that job to have him in its clutches when he goes to bed at night, and in the morning I want that same job to be sitting on the foot of his bed telling him it's time to get up and go to work. And when a job gets a fellow that way, he's sure to amount to something.—Charles F. Kettering, General Motors, U.S.A., quoted by "Cuisse na Tire, published for the Irish Transport Company.

### "British Railways Magazine"

The first print suggested for the North Eastern edition of the new *British Railways Magazine* for January was 5,000. This was based on sales in the Region of the former L.N.E.R. magazine.

On request, the printing order was increased to 5,250, and afterwards the interest of magazine agents caused the Editor to ask for a print of 6,000. So great has been the demand that the print of 6,000 was sold out on January 9. The February print will be 8,000.

### Debating Society Jubilee

This year, British Railways, Southern Region, Lecture & Debating Society, is celebrating its twenty-first anniversary, and it is also the jubilee of the Lecture & Debating movement in the Southern Region. It was reported in the *South Western Gazette* of February 1, 1900, that a committee had

Cover of folder advertising Berne-Loetschberg-Milan express service introduced last year



been formed for the purpose of instituting a debating society for the benefit of the employees of the company.

It was stated that: "The first meeting of the society was held at Brunswick House on Tuesday, January 24. Mr. J. Smith presided, and in opening the meeting expressed his gratification at finding such a large and enthusiastic gathering, which augured well for the future success of the society. After explaining the objects aimed at, and inviting all present to do what they could to make the society known and to obtain new members, the Chairman called on Mr. F. Bushrod to give the first paper of the session, the title of which was: 'The War in the Transvaal—Is It Justifiable?'"

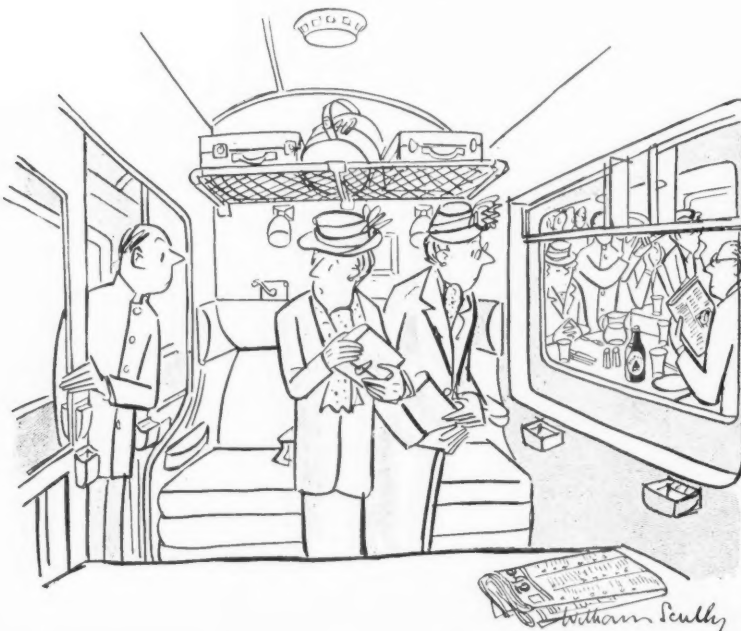
### Cheer Up!

(An essay in "Ad"-versity—a form of publicity prevalent today)

Are your spirits low?  
Does it rain or snow?  
Do you feel fed up when the east winds blow?  
Do the dark days drag  
And the long nights lag?  
Do you sometimes feel you can hardly stick it?  
Why not pop into town with a cheap\* day ticket?  
A lunch, a shop, a show, a flick,  
A change of scene will do the trick  
And winter won't seem quite so gray,  
Nor Spring so very far away.  
(\*If you need any further information Enquire at the nearest railway station).

P.S.  
Now, surely, that is proof enough  
That this "ad" verse can do its stuff—  
Or is it just a lot  
Of rot?

A. B.



"... And how do we get to the dining coach?"

[Reproduced by permission of the proprietors of "Punch"]

## OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

### NYASALAND

#### Opening of Chiromo Bridge

The first train passed over the new bridge across the Lower Shire River at Chiromo on January 6. The original bridge was carried away in March, 1948, by dense vegetation brought down by flood waters. Communication was maintained during the period of reconstruction by an improvised train ferry which could carry four large loaded wagons at a crossing.

### TASMANIA

#### Liability for Transport of Goods

Mr. C. E. Baird, General Manager, recently replied to a request from the Tasmanian Farmers' Federation that the railways should accept full responsibility as a common carrier. Mr. Baird said that his department considered that there was no justification for changing its policy on liability for goods carried, as legal advice had made it clear that Parliament intended that the railways should limit their liability as a common carrier under the railways Management Act, and it had been decided that there was no justification for departing from the present policy of charging alternative rates, one for carriage of goods at owners' risk and the other for their carriage at Commissioners' risk.

#### Aluminium Works at Bell Bay

Some time ago, it was decided to erect a large aluminium works at Bell Bay on the north coast at the mouth of the Tamar, an excellent location where there is a small port which can be greatly enlarged. Test piles for the oil tanker berth and for the wharf belonging to the Aluminium Commission are now being sunk.

Bell Bay is on the route of vessels

bound for America and Europe, and they are expected to make much use of the port. It is considered, however, that for Bell Bay to develop as an important deep-water port for Northern Tasmania, the building of a railway to connect with the Government railway branch between Launceston and Herrick may be necessary at the outset, rather than some time after the works are in operation.

The Bell Bay planning committee has agreed to areas being reserved for rail and road purposes and it is expected that a committee will be set up to consider a scheme for rail connection.

### SOUTH AFRICA

#### Goods Traffic Record

A new record for goods traffic was set up in August, 1949, with a total of 5,523,184 tons, exceeding the best previous month by 459,976 tons. The gross tonnage for the first five months of the financial year was 24,741,358 tons, an increase over the corresponding five months of the previous year of 1,676,410 tons.

Restrictions which have had to be imposed from time to time on the loading of general traffic, have now all been lifted. This change is the result of the much-improved wagon situation. Railway workshops are assembling 500 cattle wagons and 500 fruit wagons, the superstructures of which were received from Canada in October.

All tonnages waiting despatch at Union ports for Southern Rhodesia and other northern territories were disposed of by the end of October. Traffic cleared through customs is now being despatched on the same day. In the 1949 citrus fruit season 4,023,033 cases of fruit were exported, almost 500,000 cases more than in 1948. It is esti-

mated that a total of more than 6,000,000 cases of citrus fruit was carried by rail in 1949.

#### Coal Traffic

Returns for the first ten months of the calendar year show that the railways moved 14,066,446 tons of coal from Transvaal collieries in that period; this was 844,743 tons more than in the same period of last year. Production in Natal advanced by 21,972 tons. Coal for export increased by 72,300 tons and local consumption by 759,800 tons. Coal production was stimulated in 1949 by the railways being able to allocate increased wagon supplies to the collieries. Expansion in this traffic was particularly noticeable in the later months of the year. In the week ended November 12, coal by rail from Transvaal collieries reached the record of 359,884 tons, and the total for the Union was 447,228 tons. Coal hauled by rail to the ports for shipment in the same week amounted to 74,700 tons.

### CANADA

#### Dieselisation Policy of C.P.R.

Mr. N. R. Crump, Vice-President of the Canadian Pacific Railway, told the Royal Commission on Transportation of the Canadian Pacific Railway plans to replace steam locomotives with diesels. All steam engines have been removed from Vancouver Island, and the replacement of steam locomotives is almost completed on the line from Montreal to Wells River, Vermont. Approximately 58 diesel units have replaced 68 steam locomotives on freight haulage along the north shore of Lake Superior.

Mr. Crump said that the railway had reduced transport costs by greater operating efficiency and constantly-improved equipment. The C.P.R. brief

### New Works on Melbourne Suburban Lines



(Left) Newly-widened section of Clifton Hill-Heidelberg line. (Right) Suburban train crossing Darebin Viaduct between Alphington and Darebin, showing piers to take eventual double track (see paragraph in our January 6 issue)

Photo]

[G. Bakewell

contends that new capital projects must be undertaken in the near future but the financial position at present does not permit the company to raise capital by sale of stock. The use of diesel locomotives would cut fuel costs, and enable the railway to move greater tonnages of freight and to remove installations such as coal docks, ash pits, and water towers. New types of signal installations would enable more trains to operate over a single track, while improved terminal facilities, planned at Montreal and other points, would permit faster handling of traffic.

## ARGENTINA

### Statuary at Plaza Constitución Station

A statue of the Virgin of Luján, patron saint of the railways, was recently enthroned at Plaza Constitución, the Buenos Aires terminus of the General Roca Railway, in the presence of President Perón, Señora de Perón and Cardinal Copello, Archbishop of Buenos Aires. Some days later, a bust of General Roca, from whom the railway takes its name, was unveiled in the Grand Hall of the station.

### Sarmiento Railway Management

As a result of differences of opinion between the General Manager and Assistant General Manager of the D.F. Sar-

miento Railway, Señor Fernando Domecq and Señor Enrique S. Rubin, these officers have been relieved of their posts, and the management of the railway intervened. This function has been entrusted to Colonel Roberto Zubieta, General Manager of the General Roca Railway.

### Station Named after Lost Warship

Otto Bemberg station on the General Mitre Railway has been renamed Rastreador Fournier, in memory of the Argentine minesweeper which was recently lost with all hands.

## SWITZERLAND

### New Station Building at Davos-Platz

The station building at Davos-Platz, health resort and sporting centre in the Grisons on the Rhaetian Railways, has been entirely rebuilt at a cost of fr. 1,900,000. The work was begun in April, 1949, and completed shortly before Christmas.

### Military Railway Organisation

By a recent decree the Federal Council has issued new provisions governing the military railway organisation of the country. A military railway director is to be appointed; by the old regulations this appointment was not made until the

moment of mobilisation. He is to be assisted by three working zone directors in personal touch with the head of the construction and working department of the general management of the Federal Railways and with the three divisional managers of the Federal Railways.

The military railway director will have the task of ensuring the efficient and continuous working of all the railways in the interest of the armed forces and the civil population. If required by defence reasons, the director issues instructions for the limitation or discontinuance of the civilian traffic. He has unlimited power over the staff of all transport undertakings.

The Military Railway Commission which hitherto has handled in peacetime all matters relating to military railway traffic has been abolished.

## ITALY

### Fare Reduction in Holy Year

Substantial reductions in fares have been introduced by the State Railways for return journeys to Rome in connection with the Holy Year which began on December 24. Fares for individual passengers have been reduced by 40 per cent. and by 51 per cent. for groups consisting of from 51 to 750 passengers. For groups exceeding 750 persons a 60 per cent. reduction is granted.

## Publications Received

*Fluid Handling.*—The first issue of a new monthly journal, *Fluid Handling*, published by the Binjon Press, 33, South Audley Street, London, W.1, made its appearance in December, 1949. The problems involved in the diverse operations associated with fluids in various forms are encountered in all branches of industry, and the first issue of this journal contains articles, well illustrated by diagrams and photographs, on a wide range of subjects, including the dispersal of sludge and slurry, the clearance of gas mains, chemical plant pumping equipment, disposal of plating shop effluents, public water consumption, and so on. There are also sections devoted to personal, financial, and technical news. Twelve months' subscription is 20s.

*A Great Engineer: I. K. Brunel.* By S. M. Toyne. London: Common Ground Limited, Sydney Place, S.W.7. 8½ in. × 5½ in. 35 pp. Stiff paper covers. Illustrated. Price 2s. 6d. net. Mr. Toyne, a noted historian and a Vice-President of the Historical Association, has taken for the subject of his latest work the genius whom he calls "the most versatile engineer of the century," Isambard Kingdom Brunel. In an age of great engineers adept in every branch of their profession, Brunel and his friendly rival, Robert Stephenson, stood out as giants. Mr. Toyne suggests that the combination of the aesthetic and the practical in Brunel's

work, notably in his bridges, springs from his French ancestry and schooling. Brunel certainly thought and planned on imperial lines—from the Great Western Railway which made his reputation secure to the *Great Eastern*, the first luxury liner, the worry over which killed him. He conceived a special rôle for the Great Western—a monopoly of the West Country—and planned an admirably graded route, admitting of easy extensions, and a broad gauge to provide maximum comfort, speed and safety. His lesser-known "sidelines" included a prefabricated hospital for the troops in the Crimea, and the towers for the Crystal Palace on its re-erection at Sydenham after the Great Exhibition of 1851, of which he was one of the most prominent promoters.

*Modern Locomotives.* By Brian Reed. London: Temple Press Limited, Bowling Green Lane, E.C.1. 10 in. × 7½ in. 85 pp. Illustrated. Price 8s. 6d. —This addition to the Boys' Power and Speed Library, a series describing various forms of modern transport, is well supplied with useful and easily assimilated information on locomotive construction and operating. Technicalities are approached in unaffected language, and, though the greater part of the book is concerned with steam, considerable reference is made to other forms of traction, including gas turbines. The illustrations are not confined to British practice and are of a high standard, though it is difficult to understand why it was necessary to

show Western Region locomotives with a fictitious 60600 added to their numbers.

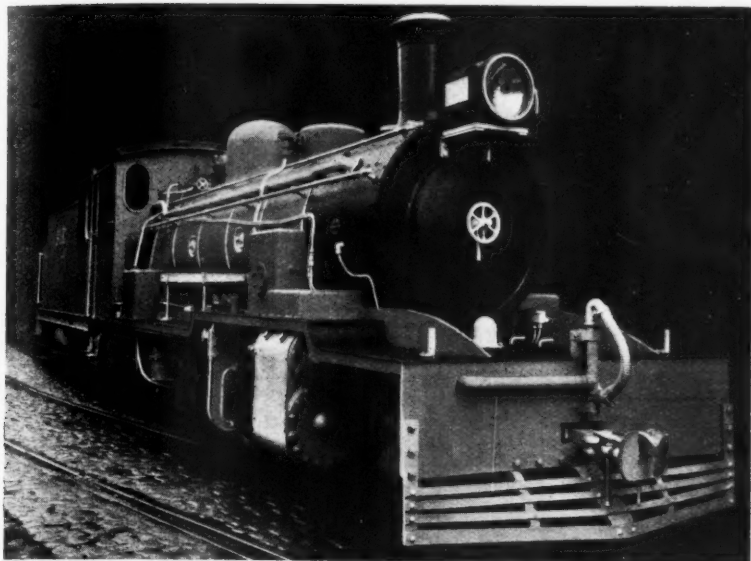
*Fusible Alloys Containing Tin.*—The Tin Research Institute, Fraser Road, Greenford, Middlesex, has issued an illustrated booklet describing the compositions and properties of the tin-containing fusible alloys and their more important industrial applications. These alloys melt at such low temperatures that they can be cast in wooden or paper moulds and poured around hardened-steel dies without affecting the hardness of the tools. Their use in aircraft factories, foundries, and engineering workshops has simplified assembling and production, and saved much time, labour, and material. Photographs show the use of fusible alloys in aircraft assembly jigs, and in press tools such as blanking, piercing, and so on.

*Gas Turbines.* By A. W. J. Dymond. Swindon Engineering Society (British Railways, Western Region), 2, Evelyn Square, Swindon. This pamphlet, No. 217, provides an excellent introduction to the subject of gas turbines. The author, who has been closely associated with the early stages of the gas turbine locomotive projects which were initiated by the former Great Western Railway, outlines the basic principles of the gas turbine in simple terms, and concludes with a review of the more important gas turbine installations which at the time of writing (October, 1947) were either completed or in process of development.



## Narrow-Gauge Locomotives for an Indian Railway

*Three 2-8-2 locomotives for main-line working on the Barsi Light Railway fitted with mechanical boiler cleaners*



*Narrow-gauge locomotive built by the Hunslet Engine Co. Ltd. for main-line working on the Barsi Light Railway*

AN order for three 2-8-2 narrow-gauge engines for main-line operating on the Barsi Light Railway has been completed at the works of the Hunslet Engine Co. Ltd. The design of the locomotives continues the policy of standardisation which was instituted on the railway in 1925, as the boilers are interchangeable with the 4-6-4 class engines, which have been in operation on the railway for many years. Restricted axle loading, a characteristic of narrow-gauge railways, is a feature of the design, the axle load being limited to 7 tons maximum.

The locomotives, which are well stayed throughout, are of plate-frame construction  $\frac{1}{2}$  in. thick, built in two sec-

tions, connected in front of the throat plate by cast-steel cross-stretchers, and a smoke box saddle holding the frames at the front end. The outside cylinders are  $15\frac{1}{2}$  in. dia.  $\times$  18 in. stroke, and steam distribution is effected by 8-in. dia. piston valves actuated by Walschaerts valve gear—giving a maximum travel of  $3\frac{1}{2}$  in., corresponding to a cut-off of 77 per cent.

A steam brake operates the brake blocks on the leading, intermediate, and driving wheels only, the latter being flangeless.

Cast-steel axle boxes with gunmetal bearings are fitted to the locomotives, together with cast-steel hornblocks which have adjusting wedges on the

leading face; spring gear is fully compensated. Lambert wet sanding is applied to the leading coupled wheels and hand sanding to the trailing coupled wheels; vacuum equipment is fitted to the engines. Calthorpe & Jones central buffing and drawgear is included, and has automatic radiating gear with sufficient clearance to operate trains over 150 ft. curves.

### Details of Boiler

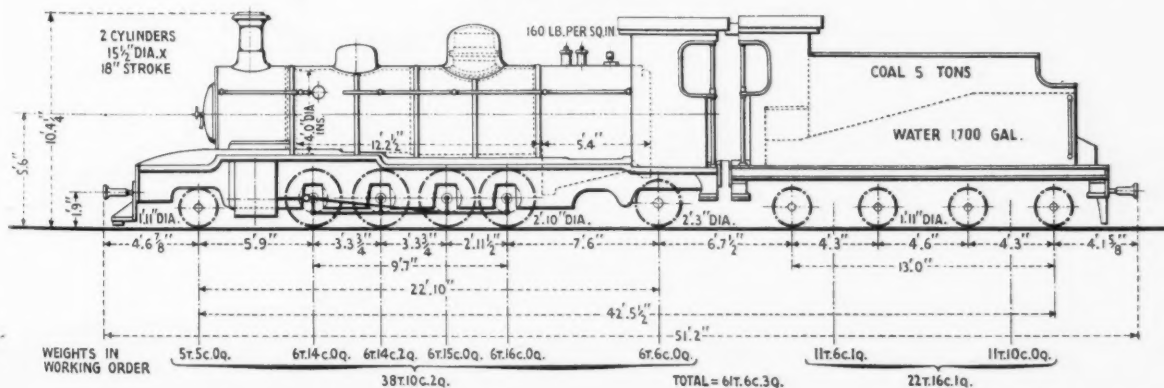
The boiler barrel is 12 ft.  $2\frac{1}{2}$  in. in length with a mean inside dia. of 4 ft. 1 in., and, because of the bad water on the system, is fitted with a Hulburd mechanical boiler cleaner and an internal steam pipe of copper. The Belpaire firebox, which is 5 ft. 4 in. long, also is of copper, and is fitted with Muntz Nicro side-stays in the flame area.

The boiler fittings include a Joco regulator and a Melesco superheater header; a steam stand is provided with valves for supplying steam to injectors, ejectors, soot blower, turbo-generator, lubricator, whistle, and other fittings.

The locomotives were built to the inspection of the consulting engineers, Messrs. Sir Bruce White; Wolfe Barry & Partners.

Below are given the leading dimensions of the locomotives:—

Cylinders (2)	...	15½ in. dia. $\times$ 18 in. stroke
Coupled wheels, dia.	...	2 ft. 10 in.
Leading truck wheel dia.	...	1 ft. 11 in.
Rear truck wheel dia.	...	2 ft. 3 in.
Heating surface:—		
Boiler and flue tubes	...	813 sq. ft.
Firebox	...	75 sq. ft.
Total evaporative	...	888 sq. ft.
Superheater	...	177 sq. ft.
Total	...	1,065 sq. ft.
Grate area	...	20.5 sq. ft.
Boiler pressure	...	160 lb. per sq. in.
Tractive effort at 90 per cent. boiler pressure	...	18,315 lb.
Tender tank capacity	...	1,700 gal.
Coal capacity	...	5 tons
Total weight, engine and tender in working order	...	61.33 tons



*Diagram showing principal weights and dimensions of the locomotive*

## Assembly-Line Methods in Sea Pier Construction

*A rail-cum-road mass-concrete viaduct with cylindrical piers built in Mexico on assembly-line principles*

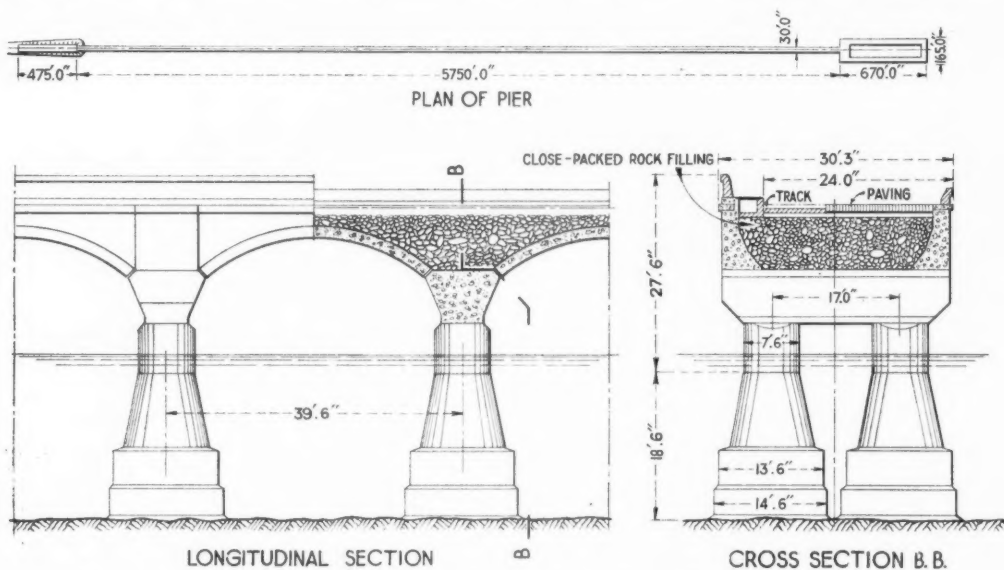
A MARINE pier of unusual design and length has been completed at Progreso, the North Yucatan port on the Gulf of Mexico, by contract for the Mexican Government. As explained more fully in an editorial note on page 62, it was built to obviate the necessity for lighterage to and from ships anchored far out from the shore because of the shallowness of the water, and to enable vessels drawing up to 18 ft. to come alongside. So gently-shelving is the sea bed that this

is only possible 6,000 ft. from the beach, and consequently the overall length of the pier is 6,420 ft., and, as it is approached by an embankment 475 ft. in length, the pierhead is 6,895 ft., or nearly  $1\frac{1}{4}$  miles, from the strand.

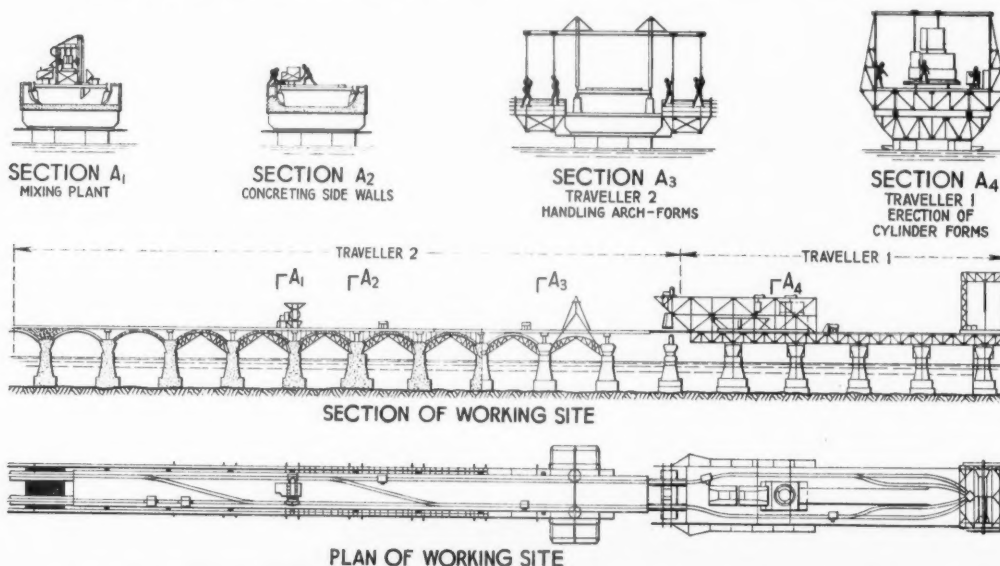
The shallow water was not the only difficulty to be overcome, as it was essential to avoid obstructing a strong current running parallel to the shore, any retardation of which would have caused sand and silt in suspension to be deposited and silt up the neighbour-

hood of the pier, so rendering it useless for berthing sea-going vessels.

The only suitable material available for constructing the pier was the porous limestone of which the sea bed is composed, and which, if used as aggregate for reinforced concrete, does not protect the reinforcement from corrosion. It was decided, therefore, to use mass concrete for both foundations and superstructure, and the design of what is in effect an arched viaduct on twin cylinder piers (shown in our illus-



Diagrams showing plan of whole pier and details of the viaduct arching and cylinders



Diagrams showing methods of construction and plant used for various stages of the work



*Part of the completed viaduct portion of the pier*

trations) was considered to provide the minimum obstruction to the current, using this material.

It will be noticed that a 30-ft. viaduct-width is provided for carrying (1) a hollow concrete footway beneath which is a duct for pipe- and cable-lines; (2) a three-rail mixed standard- and narrow-gauge single line of railway; and (3) a roadway at the same level. Also, it may be noted that the twin-cylinder piers support stone-filled arches through the medium of massive capping girders; over most of the pier-length the arch span is not less than 39 ft. 6 in.

Every sixth pier is modified and strengthened by using elliptical instead of circular cylinders to resist the thrust occurring in the event of any of the arches being destroyed. Only in the capping girders is reinforcement used to prevent cracking resulting from the contraction of the concrete, but as it is composed of 1-in. stainless-steel rods, it is not affected by corrosion.

The head of the pier, 670 ft. long by 165 ft. wide, is supported on six rows of 24-ft.-span arches of the same general design. It carries a warehouse 500 ft. long by 75 ft. wide and 42 ft. high.

#### **Constructional Considerations**

Considering the extent of the repetitive concrete work involved in the design of this structure (including 550 cylinders and 145 arches in the viaduct and 225 arches in the pierhead) it was obviously advisable to make use of abnormally elaborate travelling plant, shuttering, and arch centring, to ensure continuous and rapid progress, as on an assembly line. Moreover, it was essential that the shuttering should be used as many times as possible. Risk of damage caused by wind, waves, and current, also made it advisable to avoid using floating equipment and to carry out the work from platforms well above sea level.

Other considerations were that work should proceed simultaneously on as many parts of the structure as possible, and that the employment of skilled labour, such as mechanics, carpenters, and divers should be reduced to the minimum consistent with efficiency.

The method of construction finally evolved for nearly the whole of the work depended mainly on the use of two long movable platforms or travellers, known as No. 1 and No. 2. Traveller 1, about 200 ft. in length, was used for constructing the cylinders and capping girders, and Traveller 2, over 400 ft. long, produced the arches and spandrel and parapet walls.

Initially, however, while these travellers and the steel shuttering were being fabricated, the first 13 shoreward piers of the viaduct were constructed from wooden-pile staging. Here, moreover, there was sand to a depth of from 3 to 12 ft. overlying the limestone rock sea bed, whereas farther seaward there was little or no sand. Consequently, the standard method of construction

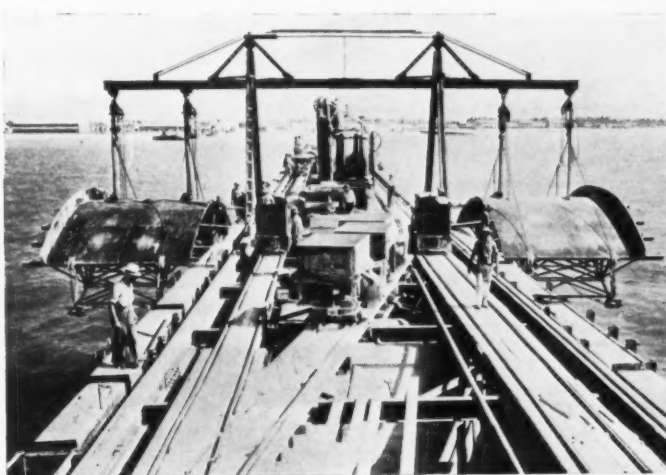
Beyond the thirteenth viaduct pier, construction was standardised as follows. Traveller 1, complete with all equipment necessary for assembling and placing the steel shuttering, for concreting under water, and for stripping the shuttering after the concrete had set, was moved forward until its outer end projected as a cantilever over the next pier site. Four supporting legs were then lowered from its end to the sea bed and braced; they subsequently served as guides for placing the shuttering.

Exact soundings were next taken to determine the precise length or height of the adjustable shuttering for the cylinders. Meanwhile the shuttering was being assembled on the deck of the traveller with the assistance of a gantry crane.

#### **Details of Steel Shuttering**

The steel shuttering for each cylinder was in two parts, an upper and mainly conical part, and a lower cylindrical skirt. The two parts were connected in such a way that adjustment to suit different depths could be made. Both parts were divided into three 120-deg. sectors, secured together with a minimum of brass bolts.

From the 14th to the 63rd pier, one skirt 4 ft. 9 in. high was used, but from the 64th pier onwards an additional skirt 3 ft. 10 in. high had to be attached. This enabled cylinders varying from 16 ft. 5 in. to 25 ft. in height to be poured. Specially strong elliptical shuttering was de-



*Gantry lifting arch-centring on each side of traveller No. 2*

used throughout the remainder of the structure had to be modified on account of the sand. Its depth necessitated the sinking of hollow concrete cylinders through the sand to bed rock; these cylinders subsequently were filled with mass concrete. As will be described, the remaining cylinders were poured under water in shuttering resting on the rock. The timber staging used for the first 13 piers afterwards served to support the erection of the travellers when they arrived piecemeal.

signed for every sixth heavier pier, and, to facilitate removal, each was composed of four 90-deg. instead of the standard three 120-deg. sectors.

After the shuttering for a cylinder had been lowered into position on the rock bed, a diver caulked any gaps occurring between them. The concrete was then poured under water in a continuous flow with the ends of the chutes immersed in the fresh concrete throughout the operation.

(Continued on page 76)



## British Breakdown Cranes for Sweden

*Two steam-operated breakdown cranes for Swedish State Railways*

**A**MONG recent deliveries of breakdown cranes from Cowans, Sheldon & Co. Ltd., there have been two units supplied to the Swedish State Railways. To the time of the delivery of these cranes the clearing of lines in Sweden after accidents had been a laborious undertaking because of the lack of modern powerful cranaage.

A large number of lines in Sweden are electrified, but it was decided to use steam in the case of these breakdown cranes against the event of an accident causing an interruption in electricity supply. The standard gauge of 4 ft. 8½ in. applies in Sweden, but the maximum height of vehicle, i.e., 15 ft. 3 in., permissible by the loading gauge, allowed the cranes to be liberally dimensioned.

### General Design Features

One of the difficulties encountered in the design of the cranes was the stipulation by the Civil Engineering Department of a maximum axle load which on no account could be exceeded under running conditions; the maximum permissible load was 13 tons per axle, and so that the crane carriage would not be of excessive length, and thus impair the usefulness of the crane when working,



*View of the jib resting on the swivelling trestles*

it was decided to use relieving bogies. Hopwood tubular boilers, arranged for coal firing, with a working pressure of 120 lb. per sq. in., are fitted on the cranes; the engine portion incorporates Walschaerts valve gear.

As the cranes are required to serve a large area, it was necessary that they should be capable of travelling at fast speeds in train to reduce to a minimum the time taken to reach the accident

*(Continued on page 78)*



*British breakdown crane for Swedish State Railways with relieving bogies and outriggers*

## "Daylight Limited" Expresses in New Zealand

*Successful trial runs have resulted in the re-introduction of through day trains between Auckland and Wellington*

FOR the first time since Easter, 1941, special "Daylight Limited" expresses were run as a trial between Auckland and Wellington at Labour Day weekend in October, 1949. The regular service between these cities provides night trains only. The purpose of the trial was to examine the practicability of an accelerated daytime schedule with modern equipment, and at the same time determine the desirability of running daylight services during future holiday periods.

The trial schedules, which provided for departures from Auckland at 8.10 a.m. on Friday and Monday, and from Wellington at 8.0 a.m. on Saturday and Tuesday, allowed 13 hr. 45 min. for the 425 miles, 30 min. faster than the time allowed the "Night Limited" expresses and more than an hour faster than the time allowed the pre-war "Daylight Limited" trains. On the Saturday, with no stop required to cross the down "Night Limited" (which does not run that night), the northbound "Daylight" was timed into Auckland at 9.35 p.m., 13 hr. 35 min. from Wellington. This is believed to be the fastest time yet booked for an express over this route. The run was completed in 13 hr. 32 min.

Stops were limited to the minimum number necessary for refreshments, locomotive purposes, and the crossing of expresses on single-line sections, but their duration appeared to be affected by the difficulties in finding a path which would cause the least possible disturbance to other traffic, and amounted to as much as 85 to 98 min. on different runs.

### Make-up of Train

The load of the train was limited to seven vehicles, instead of the normal ten or twelve, and comprised a 56-ft. brake van, marshalled at the front of the train instead of at the rear as is usual in New Zealand, three 56-ft. second-class coaches, accommodating 168 second-class and 87 first-class passengers. The train, representing 198 tons tare behind the tender, scaled approximately 215 tons with passengers and luggage. The maximum express train loads taken on normal schedules by the 4-8-4 locomotives of classes "K" and "Ka" over the high country through the centre of the North Island are 320 tons on 1 in 50 and 400 tons on 1 in 70 gradients with curves of 7½-10 ch. radius.

A coupé compartment in one of the first-class coaches was fitted up for the use of train hostesses, two of whom travelled through on each trip. This was the first introduction of hostess service to North Island train travellers, and it was favourably commented on. Another feature of the trial runs was the use of a steam locomotive right into Wellington



First post-war Auckland-Wellington "Daylight Limited" near Waiouru, highest station in New Zealand (2,610 ft.) on trial run. Class "Ka" 4-8-4 locomotive No. 941

to eliminate the usual stop at Paekakariki for the changeover from steam to electric traction, thereby saving ten minutes.

### Locomotive Performance

The locomotive work throughout was good, and indicated that the trial schedules allowed ample margin for the recovery of time lost *en route*; on some sections there was noticeable easing of the engine to avoid too early an arrival at stations. With two exceptions, the locomotives used were oil-burning 4-8-4s of classes "K" or "Ka," which have 4 ft. 6 in. coupled wheels, 20 in. x 26 in. cylinders, and 200 lb. per sq. in. working pressure, giving a nominal tractive effort of 32,730 lb., and some 55 tons of adhesion out of an engine weight of 86.7 tons ("K") or 92.0 tons ("Ka").

The two exceptions were the use of an oil-burning "J" class 4-8-2 between Auckland and Frankton Junction, and the trial of an "Ab" class Pacific between Palmerston North and Wellington on the second pair of runs. These are smaller machines, with engine weights of 69 and 52 tons respectively.

As can be seen from the following table which summarises details of the scheduled, actual, and net running times over each stage of the journey on two of the runs, the total estimated net running time in each instance was a gain of some 44 min. on the schedule; this estimate makes no allowance for the easy running noted over the concluding sections of some stages.

Due to track limitations, on this main line there can be no sustained high speed in the British sense. High speed

### TRIAL RUNS, OCTOBER, 1949

Load: 198 tons tare, 215 tons gross

Section	Dist. Miles	Sched. times Min.	Actual times M. S.	Net times* Min.	Average speeds† M.p.h.
(Up—Saturday, October 22)					
Wellington—Palmerston North	85.0	135	139 00	117½	43.5
Palmerston North—Marton	28.6	49	49 28	47½	36.1
Marton—Taihape	44.5	76	72 23	72½	36.8
Taihape—Ohakune Junction	40.7	80	78 28	78	31.3
Ohakune Junction—Taumarunui	50.3	102	100 08	99	30.5
Taumarunui—Te Kuiti	48.4	90	86 42	84½	34.3
Te Kuiti—Te Kawa‡	19.4	30	29 25	29½	39.5
Te Kawa—Frankton Junction	22.1	39	36 57	36	36.8
Frankton Junction—Auckland	86.0	125	122 39	117	44.1
(Down—Monday, October 24)					
Auckland—Frankton Junction	86.0	130	124 32	122½	42.0
Frankton Junction—Te Kuiti	41.5	67	62 58	63	39.5
Te Kuiti—Taumarunui	48.4	95	90 56	88½	32.8
Taumarunui—Oio§	19.2	43	41 52	40	28.8
Oio—Ohakune Junction	31.1	63	62 10	62½	30.0
Ohakune Junction—Taihape	40.7	82	78 40	78½	31.1
Taihape—Marton	44.5	72	71 43	71½	37.2
Marton—Palmerston North	28.6	48	45 43	44	39.0
Palmerston North—Otaki‡	40.9	62	68 44	58	42.3
Otaki—Wellington	44.1	76	71 29	65½	40.4

\* Estimated net times making allowance for temporary speed restrictions, out-of-course stops, signal checks, etc., but not for slow running due to deliberate easing of the engine

† Average speeds, start-to-stop in each case, based on the estimated net running time

‡ Scheduled stop to cross express

§ Scheduled stop for water

in New Zealand means 50-55 m.p.h. and, between Auckland and Wellington, even this is possible only over limited sections of the line, mainly at the two extremities of the route. The greatest interest therefore centred on the hill-climbing exploits of the locomotives, which on the up journey included a minimum of 31 m.p.h. on the  $2\frac{1}{2}$  miles of 1 in 57 up to Pukerua Bay, begun at 47, by "Ka" 4-8-4 No. 939; an acceleration from 35 to 37 m.p.h. up a 1 in 70 bank approaching Marion; a steady 31 m.p.h. up the long 1 in 60 Mangaweka bank (south of Taihape), for both of which "K" 4-8-4 No. 924 was responsible; and minima of 43-45 m.p.h. up all the 1 in 100 banks (from one to  $3\frac{1}{2}$  miles in length) between Mercer and Auckland, by the light-weight "J" class 4-8-2.

Coming south on the Monday, there were numerous interesting performances. For instance, from Te Kuiti the line climbs 935 ft. in the 20 miles to Porootarao in four distinct steps with a ruling grade of 1 in 70, and here class "K" 4-8-4 No. 928 set forth with a will on the first bank, seven miles in length, which starts right out of Te Kuiti yard. On the first quarter-mile of the bank, speed was  $26\frac{1}{2}$  m.p.h. Two miles further on it was 34. Then came two slowings for track repairs, and from the second of these—to 8 m.p.h.—there was an acceleration to 35 m.p.h. in less than two miles, on a steady 1 in 70 grade with continuous 10 to 15 ch. curves. Speed restrictions on the subsequent banks prevented a continuation of this effort, but all were surmounted at about 30 m.p.h. The schedule allowed 44 min. to pass Porootarao, 20 miles, but No. 928 reduced this to 37 min. 54 sec.

On the 31.6-mile climb of 2,086 ft. from Taumarunui to the 2,647-ft. altitude of National Park, there are two 1 in 50 banks of particular note. The first, from Kakahi, is six miles long, and was surmounted by the "Ka" class 4-8-4 No. 941 at between 22 and 26 m.p.h., the variations due in the main to track curvature. The second, from Raurimu up the famous spiral, is just over  $6\frac{1}{2}$  miles in length, and despite continuous curvature of  $7\frac{1}{2}$ -12 ch. radius for the first four miles, speed gradually picked up from 23 to a steady



"Daylight Limited" hauled by Class "Ka" locomotive on trial run, crossing the Hapuwahenua Viaduct on eight-mile climb at 1 in 60

$26\frac{1}{2}$  m.p.h. On the upper sections, the engine was noticeably eased, and speed fell to 19 m.p.h. into National Park station, but the 7.2 miles from Raurimu (passed at 31 m.p.h.) had been covered in 17 min. 44 sec. against the 20 allowed.

The "Ka" class 4-8-4 No. 939, north-bound from Wellington on the Saturday, after having suffered a harassing series of checks costing fully  $21\frac{1}{2}$  min., ran from Levin to Palmerston North, 28.6 miles, in 37 min. 7 sec. despite two slowings to 20 m.p.h. over bridges and one to 25 through a junction. There was also an overall restriction to 40 m.p.h. over the last seven miles, but across the Makerua Plains where the track has recently been relaid with 85- and 90-lb. rails, ten miles were covered at an average speed of 57 m.p.h. with a maximum of 60. Milepost 75, 16 miles from the Levin start, was passed in 18 min. 45 sec. After the slow-

ing, there was a rapid acceleration over short undulating grades to 60 m.p.h. within  $1\frac{1}{2}$  miles, and the next three miles were covered in just under three minutes, with a maximum speed of 64 m.p.h. The riding over the new track was steady and smooth, in contrast to the older track where speed is restricted pending relaying.

On the Tuesday, the 52-ton "Ab" class Pacific, which also has 4 ft. 6 in. coupled wheels, ran from Levin to Palmerston North in the even better time of 35 min. 36 sec., but this engine had the advantage of passing Levin at speed and no slowings over the two bridges which affect the running of the heavier 4-8-4s. The Pacific covered the 15.3 miles from Koputaroa to Linton, almost level, at an average speed of 54.4 m.p.h.

"Daylight Limited" expresses are running three times a week between Auckland and Wellington this month.

### Assembly Line Methods in Sea Pier Construction

(Concluded from page 73)

After the second cylinder of each pair had been poured, the placing of the reinforcement and concrete pouring for the capping girder followed.

While this was going on at the front end of Traveller 1, the rear end was used for stripping the shuttering from previously-cast cylinders and capping girders as soon as they had set.

Closely following Traveller 1 came Traveller 2, at the front end of which centring and shuttering for the arches and spandrel parapet walls was erected. For each arch the steel centring was in

two halves suspended from a transverse gantry runway projecting beyond the sides of the viaduct, so that each half could be pulled outwards from the arch ring when set and lifted clear. Shuttering for the side walls was placed on the centring, and the concrete for the arch and walling was poured from a mixing plant at the middle of the traveller. The centring and shuttering were removed at the rear end of this traveller, and, as soon as the concrete had set sufficiently to carry it, the stone filling over the arches was placed and surfaced to form the deck. This enabled the traveller to be moved forward and a narrow-gauge service track to be laid. Generally similar methods

were used for constructing the pierhead.

So efficient were these assembly-line methods that 12 viaduct piers with capping girders were completed a month on several occasions, and only bad weather reduced the average for all the viaduct piers to nine a month.

The design and carrying out of this work were entrusted by the Mexican Government to the Christiani & Nielsen Corporation, of Mexico and New York, of which Mr. Anders Christiani was the general superintendent and engineer. For this information we are indebted to an article by Mr. H. O. Christiani, President of the firm, which appeared recently in our contemporary, *Engineering News-Record*.



## Storm Damage on the Spanish Railways

*Widespread dislocation was caused by landslides and floods after torrential rain*

LAST September, the Spanish railways suffered severe damage from torrential rain storms, and the repair work and restoration of services as soon as possible required considerable labour.

Rainfall in Spain is unevenly distributed. When the rains come many water-courses which remain dry most of the

along with it. One of the station staff and members of his family perished in the flood. This was the most serious of all the interruptions in Andalucia, as it meant the replacement of the bridge over the Salado river. As the original bridge could not be used, it was necessary to erect temporary spans supported by towers of sleepers, using the existing

piles and abutments. This work was actually carried out in six days.

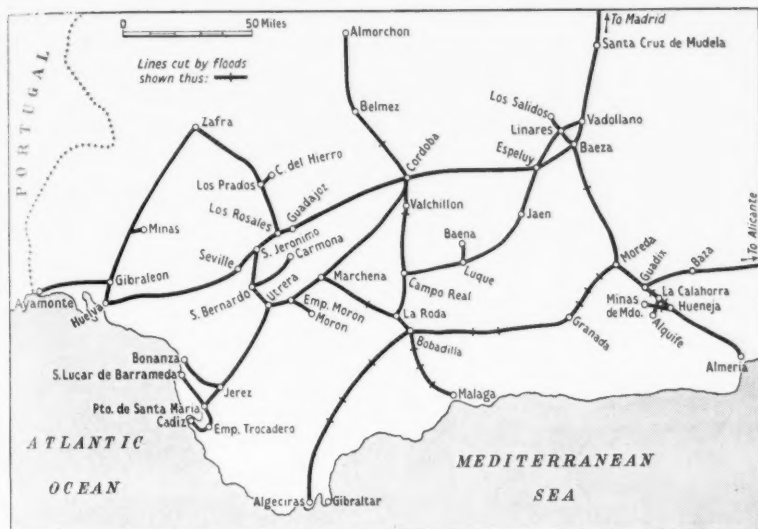
On the lines from Valencia to Madrid, via Cuenca, and from Valencia to Tarragona, serious interruptions occurred. On the first-named the waters carried away a pier of the bridge between the stations of Chesto and Llano and moved one of the piles of another bridge, causing it to sink more than 2 ft. At other places damage to the embankments was caused.

### Valencia-Tarragona Line Cut

On the Valencia to Tarragona line, outside Castellon station, the flood tore away more than 80 yd. of the embankment leading to the bridge over the Seco ("dry") River, with the track, and covered the ground with tree trunks carried from a nearby saw-mill. In different places scouring and erosion of the embankments resulted. At the bridge over the Chinchilla river, the waters entirely removed the embankment on the Valencia side, leaving the abutment uncovered.

In Cabanes Station the three tracks, with points, disappeared, and the space was filled with stones and earth up to a height of more than a yard. In some cuttings, the track was uprooted and buried under a 5 ft. layer of stones and earth, varying in length from 550 to 2,800 yd.

As soon as the flood waters dropped, telephone communication was rapidly established, and soon afterwards, all the



*Part of Spain mainly affected by flood damage*

year not only fill with water, but cause landslips, which were the chief reason for the dislocation on the railways.

The lines affected were mainly in the Levante—from Valencia to Madrid via Cuenca—from Valencia to Iria and Valencia-Barcelona, parallel to the eastern Spanish coast in Andalucia, especially at Almeria, and on lines from Moreda to Granada, Bobadilla to Malaga, Bobadilla to Algeciras, Bobadilla to Cordoba, Huelva to Ayamonte; and the branch from Marchena to La Roda de Andalucia, in the province of Sevilla.

Other lines which were less seriously affected were those from Soria to Castellon, Calatayud to Burgos, Aranjuez to Cuenca, Madrid to Barcelona (due to the Jalon river overflowing near Alhama de Aragon), Saragossa to Barcelona via Lerida, and in Asturias and Galicia.

On the Marchena-La Roda line in Aguadulce Station, because of flooding of the Salado River, the waters reached a height of about 5 ft. and dragged the metal bridge of San Fernando beyond the station, in the direction of La Roda, displacing it more than 100 yd. from its original position. Ten wagons of a train which was shunting there were dragged



*Reconstruction in progress of track and embankment leading to the Seco River Bridge at Castellon, Valencia—Tarragona line*

bridge; affected were repaired. At the Chinchilla River bridge, where the damage was greater, towers of sleepers were constructed and a metal span placed across them, enabling the workmen's train to be run on the fifth day of the inundation. After eight days and nights of uninterrupted work, it was possible to clear the line throughout from Valencia to Tarragona, and afterwards the filling of the embankment involving the tipping of great quantities of earth, cinders, on which were laid more ballast and some 1,700 sleepers, was continued.

Ninety-nine workmen's trains, totaling 1,289 wagons with cinders and earth, 210 with ballast, 28 with stone, 31 with sleepers and five with rails, were run. The cost of the damage caused in that region amounts to 1,000,000 pesetas, and the loss from the interruption of services is estimated at 3,000,000 pesetas.



*Section of embankment at Cabanes swept away for a distance of 700 yd.*



*Reconstructed track and embankment leading to bridge over Seco River at Castellon*

#### **British Breakdown Cranes for Sweden** (Concluded from page 74)

site; with this in view, and to conform with modern Swedish practice, the Swedish State Railways supplied the manufacturers with their standard S.K.F. roller bearing axleboxes for use on these cranes. The cranes are fitted with Swedish Hildebrand-Knorr automatic air brakes for use when running in train.

The maximum working capacity of the cranes is 50 tons at 18 ft. radius when the hinged outriggers are in use; when the cranes are operating in a free-

on-rail condition their capacity is 10 tons at 19 ft. radius; the maximum outreach of the cranes is 39 ft., at which jib setting a load of 3 tons can be lifted with the cranes free-on-rail, or 6 tons with the hinged outriggers in use, and the maximum height of lift obtainable is approximately 39 ft. above rail level.

When the cranes are run in train the jibs are lowered on to match-wagons and supported by swivelling trestles, the revolving structure being locked centrally on the crane carriage; the jibs are allowed movement in relation to the crane structure by means of a

patented articulated jib foot arrangement, which has particular advantages when negotiating curves. The cranes are capable of travelling in train at a speed of 55 m.p.h., and of negotiating a curve of 5 chains radius when running.

After erection and testing at the Carlisle works, the cranes were dismantled and shipped to Sweden, where they were re-assembled at Ange and Nässjö respectively under the supervision of the manufacturers' engineer. Cranes of a similar design are being manufactured for the Norwegian State Railways.

## RAILWAY NEWS SECTION

## PERSONAL

## WESTERN REGION APPOINTMENTS

The Railway Executive announces that, with the concurrence of the British Transport Commission, the following appointments have been made:—

Mr. K. J. Cook, Principal Assistant to C.M.E., Swindon, to be Mechanical & Electrical Engineer, Western Region.

Mr. W. N. Pellow, Running Superintendent & Outdoor Assistant to C.M.E., Swindon, to be Motive Power Superintendent, Western Region.

Mr. H. Randle, Works Assistant to C.M.E., Swindon, to be Carriage & Wagon Engineer, Western Region.

These appointments are in accordance with the organisation for Mechanical & Electrical Engineering which is being standardised throughout British Railways.

Mr. W. H. Kitson has been re-appointed Agent-General for Western Australia in the United Kingdom for a further three years.

Sir Francis Joseph has resigned from the board of the Birmingham Railway Carriage & Wagon Co. Ltd.

We regret to record the death on January 14 of Mr. Hildred Carlisle, who was a Director of United Railways of the Havana & Regla Warehouses Limited.

Mr. F. V. Spark, Director & Chief Accountant of Harland & Wolff Limited, has been appointed Secretary to the company. He will in future combine the duties of Chief Accountant and Secretary.

Mr. J. Griffith Hall, Secretary to the Westinghouse Brake & Signal Co. Ltd., has been appointed Director & Secretary, and Mr. Mervyn W. Shorter, Sales Manager, becomes Director & Sales Manager.

Mr. C. K. F. Hague has been appointed Deputy Chairman of Babcock & Wilcox Limited, in place of Sir Archibald McKinstry, who has resigned that position, but who has intimated his willingness to remain on the board. Mr. Hague retains his position as Managing Director.

## LONDON TRANSPORT EXECUTIVE

The Minister of Transport announces with regret that Sir Richard Burbidge has resigned his appointment as a part-time Member of the London Transport Executive, owing to the growing demands of his business activities.

## COASTAL SHIPPING ADVISORY COMMITTEE

The Minister of Transport has been informed by the British Transport Commission that it has nominated Mr. C. P. Hopkins, Chief Regional Officer, Southern Region, Railway Executive, to the Coastal Shipping Advisory Committee, set up under section 71 of the Transport Act, 1947, in place of Mr. G. L. Darbyshire, who has retired from railway service.

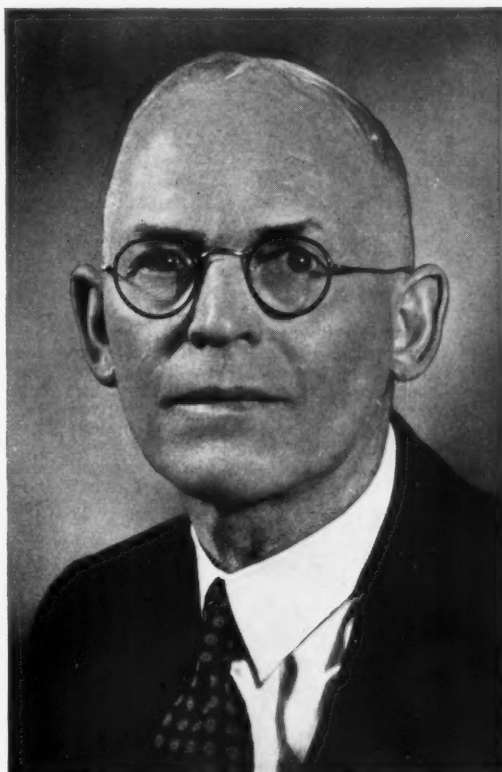
Dr. M. M. Loubser, B.A., D.Sc., Chief Mechanical Engineer of the South African Railways, who, as recorded in our last week's issue, has retired, was educated at Victoria College, Stellenbosch, Cape (now the University of Stellenbosch), where he obtained the degree of B.A. (Honours) in Science, and won a bursary for further study overseas. He continued working at the University of Charlottenburg, and there obtained the Diploma in Engineering. After

R.N.V.R. (retired), has for the last two-and-a-half years been Superintendent Engineer, Steamers Section, Sudan Railways, at Khartoum.

Mr. J. D. C. Churchill, who is in charge of the office of the Development & Research Officer of London Transport, has been appointed a Principal Executive Assistant. He joined the London Underground Railways in 1929, and was

appointed to the office of the Vice-Chairman of the L.P.T.B., the late Mr. Frank Pick, in May, 1939. During the war he served in operations in Europe and the Mediterranean, becoming a Brigade Major in 1944. In January, 1946, he was appointed to the Chairman's Office, and he became Secretary to the Chairman in April, 1947, transferring to the Department of the Chief Development & Research Officer in October, 1947.

Mr. R. M. Robbins, Secretary to the Chairman of the London Transport Executive, has also been appointed a Principal Executive Assistant. He entered the service of the L.P.T.B. in September, 1939. Afterwards he served in the Transportation Branch of the Royal Engineers, in the Middle East and Mediterranean theatres. He was released with the rank of Major, resuming service with London Transport in April, 1946. He was appointed Secretary to the Chairman in September, 1947. Since January, 1949, Mr. Robbins has also acted as Secretary to the London Plan Working Party and the London Joint Advisory Committee, the joint bodies of the Railway and London Transport Executives concerned with the development of the London Railway Plan and matters of common interest to London Transport and the railway Regions.



Dr. M. M. Loubser

Chief Mechanical Engineer, South African Railways, who has retired

working as a draughtsman in Germany for four years, Dr. Loubser returned to South Africa, where, for a further six years, he was a lecturer in applied mathematics at the Universities of Cape Town, Witwatersrand, and Stellenbosch. In 1925 he joined the Mechanical Department of the South African Railways, and, before being promoted Assistant Chief Mechanical Engineer in 1936, served in various parts of the country as Test Engineer, Locomotive Superintendent, and Mechanical Engineer. He was appointed Chief Mechanical Engineer in 1939. In 1942 the University of Stellenbosch conferred on Dr. Loubser the honorary degree of D.Sc. (Engineering).

Mr. A. E. C. Gregg has been appointed Managing Director of Associated British Oil Engines (Marine) Limited, the company which has been formed to provide a joint selling organisation for all oil engines made by the A.B.O.E. Group intended for shipboard use. Mr. Gregg, who holds the rank of Commander (E),

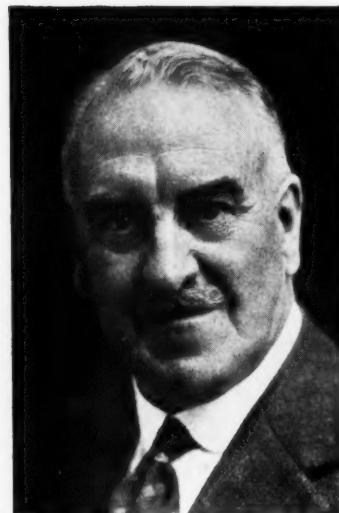
## CANADIAN PACIFIC RAILWAY

Mr. George F. Buckingham has been appointed General Traffic Manager, Canadian Pacific Railway, at Montreal, succeeding Mr. C. E. Jefferson, who was recently appointed Vice-President (Traffic).

The European General Manager of the Canadian Pacific Railway announces the following appointments:—Mr. R. R. James, Chief Assistant to the European Freight Manager, to be General Freight Agent in London; Mr. R. H. Hobern, of the Passenger Department in the Bristol Office, to be Passenger Agent there.

Mr. H. J. Birkbeck, previously Assistant (Railway & General) to the Charges Adviser, British Transport Commission, who has been appointed Principal Charges Officer to the Commission, joined the North Eastern Railway in the District Passenger Agent's Office, Darlington, in 1906. He subsequently served in the Mineral and Goods Departments at Darlington, Middlesbrough and York, and in 1913 represented the North Eastern Railway and also the East Coast railways (G.N., N.E. and N.B.) at the Ghent Exhibition. In 1914



**Mr. H. J. Birkbeck**Appointed Principal Charges Officer,  
British Transport Commission**Mr. F. Egerton**Appointed District Operating Superintendent,  
Stoke, L.M. Region, British Railways**The late Mr. John O'Dowd**Formerly Traffic Manager, Great Southern  
Railways, Ireland [Lafayette] [Dublin]

his services were lent to the Tees Development Association. During the 1914-18 war he served in France, and was awarded the Meritorious Service Medal and mentioned in despatches. He was demobilised in 1919, and was for two years engaged in London in connection with the investigations of the Rates Advisory Committee, afterwards being transferred to Hull for operating experience. From 1923 to 1929 he served in the Chief General Manager's Office of the L.N.E.R., in the Works and Shipping Sections, and afterwards in the Goods Manager's Rates & Charges Section,

Kings Cross, where he was in charge of development and took an active part also in pooling matters. Mr. Birkbeck was appointed District Goods & Passenger Manager, Peterborough, in 1936, but was released from those duties early in 1943 to take up special work in connection with the Road & Rail Conference. He was appointed Assistant (Railway & General) to the Charges Adviser, British Transport Commission, on nationalisation.

Mr. F. Egerton, Assistant District Operating Superintendent, Derby, London

Midland Region, British Railways, who has been appointed District Operating Superintendent, Stoke-on-Trent, commenced his railway career on the North Staffordshire Railway at Sandbach in 1905. During the 1914-18 war he saw service with the Cheshire Regiment at Gallipoli, and was seconded to the R.F.C., with which he remained until the end of the war. On demobilisation in 1919 he returned to the North Staffordshire Railway, holding various positions at headquarters, and in 1925 was appointed Assistant District Controller, Stoke-on-Trent, L.M.S.R. He

### Presentation and Dinner to Mr. C. P. Hopkins



*Officers of the North Eastern Region and others who attended a presentation and dinner at the Royal Station Hotel, York, recently, to Mr. C. P. Hopkins, Chief Regional Officer, North Eastern Region, British Railways, before his departure to take up his new appointment as Chief Regional Officer, Southern Region*

*Left to right:* Messrs. B. X. Jessop, Assistant Chief Regional Officer; L. Reeves, Mechanical Engineer, Doncaster; J. L. Meadowcroft, Area Superintendent, Eastern Area, Hotels Executive; H. S. Cole, Chief of Police, Northern Area, B.T.C. Police; C. Cooper, Regional Staff Officer; R. I. Spencer, Assistant Motive Power Superintendent; C. P. Hopkins; A. P. Hunter, Divisional Operating Superintendent, York; J. Taylor Thompson, Civil Engineer; H. R. Garth, Assistant Civil Engineer; W. Naylor, Assistant to Commercial Superintendent (Passenger); R. A. Smeddle, Deputy Mechanical & Electrical Engineer, Southern Region; Dr. R. Fraser Mackenzie, Medical Officer, York; Messrs. E. W. Arkle, Commercial Superintendent; J. D. Tattersall, Senior Solicitor Assistant, British Transport Commission, York; H. F. Sanderson, Assistant Commercial Superintendent; G. H. Bowes, Assistant to Commercial Superintendent (Freight); F. T. Gray, Assistant to Commercial Superintendent (Cartage & Terminals); G. Tunbridge, Estate Surveyor

Photo]

[The Yorkshire Evening Press]

was made Senior Assistant in 1929, and in 1938 he was transferred to Stafford as District Controller. Mr. Egerton went to Derby as Assistant District Operating Superintendent in 1946.

Mr. John O'Dowd, formerly Traffic Manager of the Great Southern Railways, Ireland, whose death we have already briefly recorded, was the son of the late Mr. John Dowd, at one time General Manager of the Dublin & Meath Railway, and subsequently Assistant Manager of the Midland Great Western Railway. Mr. O'Dowd was born in 1881, and himself joined the old Midland Great Western as a clerk in the Locomotive Department in 1897. He became Chief Trains Clerk in the Goods Manager's office of that company in 1913. He assisted the late Mr. Joseph Tatlow in his inquiry into the working of the Londonderry & Lough Swilly Railway. On the amalgamation, 1925, Mr. O'Dowd was appointed Indoor Assistant to the Operating Superintendent, Great Southern Railways, and was a member of the committee appointed to report on the working of the company's branch lines. In 1928 he was promoted Indoor Assistant to the Traffic Manager. He was for many years Chairman of the Traffic Department Secretarial Council and a member of the Locomotive Council. He succeeded Mr. P. J. Floyd as Traffic Manager in 1942 and retired from that position later in the same year.

#### LONDON MIDLAND REGION STAFF CHANGES

The following staff changes are announced by British Railways, London Midland Region:—

Dr. G. O. Hughes, Divisional Medical Officer, Southern Region, London Bridge, to be Medical Officer, Euston.

Dr. G. Leith-Barron, Medical Officer, Derby, to be Medical Officer, Crewe (with full control of Accident Hospital, Mill Street, Crewe).

Mr. R. G. Booth, District Engineer, Leeds, Eastern Region, to be District Engineer, Leeds, London Midland Region.

Mr. A. L. Owen, Assistant District Engineer, Bradford, to be District Engineer, Bradford.

Mr. E. Morgan, Lighting & Heating Assistant, Civil Engineer's Department, Euston, to be Senior Research Engineer, London Midland Region, Derby.

Mr. C. Clark, Senior Clerk, Station Working Section, Commercial Superintendent's Office, Euston, to be Station Working Assistant to Commercial Superintendent, Euston.

#### INDUSTRIAL MISSION TO PAKISTAN

The British Government has accepted an invitation from the Pakistan Government to send an industrial mission to Pakistan. It will arrive in Karachi on February 26 and spend about three weeks in Pakistan. The mission will be led by Lord Burghley, and the other members will be Mr. A. D. Campbell (textile industry), Dr. G. I. Higson (chemical industry), Mr. E. C. Holroyde (electrical industry), Sir Cyril Jones (food processing), Mr. W. J. H. Rennie (civil engineering), Mr. S. A. Wright (agricultural machinery industry), and a representative of the Trades Union Congress (not yet finally nominated). Mr. W. Godfrey, the British Senior Trade Commissioner in Pakistan, will also be a member of the mission *ex officio*. Mr. M. J. Watt, of the Federation of British Industries, will be attached in an advisory capacity, and the Secretary will be Mr. J. Gray, of the Board of Trade.

Mr. John Matthews, previously Junior Assistant to the Divisional Superintendent, Bristol, Western Region, British Railways, has been appointed Assistant to the European Manager, Canadian National Railways.

We regret to record the death on January 12, at the age of 79, of Mr. C. Bassage, who retired from the service of the Great Western Railway in 1934, when he held the position of Principal Assistant to the Chief Goods Manager. The funeral service for Mr. Bassage was held on January 16 at Tettenhall Church, Wolverhampton, when, in addition to family mourners, those present included:—

Mr. C. Furber, Commercial Superintendent, Western Region, British Railways (also representing Mr. David Blee, Member of the Railway Executive, and Mr. K. W. C. Grand, Chief Regional Officer, Western Region); Mr. G. Cornish, Railway Executive; and the following Western Region officers: Messrs. J. A. Warren-King, District Goods Manager, Birmingham; H. Bokton, District Goods Manager, Bristol; C. H. Adey, District Goods Manager, Worcester; J. F. Anstey, District Goods Manager, Shrewsbury; W. Lampitt, District Goods Manager, Gloucester; A. V. R. Brown, Divisional Superintendent, Birmingham (also representing Mr. Gilbert Matthews, Operating Superintendent); R. F. Wilson, Divisional Engineer, Wolverhampton; E. Bantock, Cartage Agent, Wolverhampton; and R. Beasley, Goods Agent, Bristol. Mr. L. C. Brittlebank, District Goods Manager, Birmingham, L.M. Region, and Mr. G. E. Curtis, District Goods Manager, Wolverhampton, L.M. Region, also

attended, as well as a number of retired G.W.R. officers, including Messrs. H. Wheeler, A. S. Mills (who also represented the Retired Railway Officers' Society), E. W. Mauger, W. H. Hall, A. Twist and E. O'Neill.

The British Engineers' Association has elected as President, for the current year, Mr. Keith Fraser, Chairman of W. J. Fraser & Co. Ltd., and a Director of Babcock & Wilcox Limited. Mr. David D. Walker, Joint Managing Director of Evershed & Vignoles Limited, has been re-elected a Vice-President, and Mr. E. Bruce Ball, Managing Director of Glenfield & Kennedy, Limited, has been elected a Vice-President.

Mr. Robert Burgoyne, Regional Staff Officer, Western Region, British Railways, will be among the recipients of insignia of the Order of St. John at an investiture of the Order to be held by the Lord Prior today (January 20). He will be invested with the insignia of Serving Brother.

A presentation from the officers of the Scottish Region, British Railways, was made recently to Mr. William Yeaman on the occasion of his retirement as Commercial Superintendent of that Region. Mr. T. F. Cameron, Chief Regional Officer, made the presentation, and Mr. T. H. Moffat, Deputy Chief Regional Officer, and Mr. J. B. Hastie, Divisional Manager, Scottish Division, Road Haulage Executive, also took part in the proceedings.

#### Presentation to Mr. William Yeaman



*A group of Scottish Region Officers, including Mr. T. F. Cameron, Chief Regional Officer, on the occasion of a presentation to Mr. William Yeaman, Commercial Superintendent, on his retirement (see paragraph above)*

*Back row (left to right): Messrs. L. E. Marr, Assistant Commercial Superintendent; G. E. Beynon, Chief of Police, Scottish Area, B.T.C. Police; Captain H. J. Perry, Marine Superintendent; Messrs. C. R. Atkins, Stores Officer; J. Hastie, Treasurer; I. R. Frazer, Assistant Civil Engineer; R. M. Scott, Assistant Estate & Rating Surveyor*

*Centre row: Messrs. A. Stewart, Assistant to Chief Regional Officer; R. Simpson, Regional Staff Officer; G. S. Bellamy, Mechanical & Electrical Engineer; W. Bryson, Signals & Telecommunications Engineer; Dr. T. C. D. Watt, Medical Officer; Messrs. J. G. Dunlop, Accountant; J. B. Hastie; E. C. Dewick, Estate & Rating Surveyor; R. D. Kerr, Assistant Marine Superintendent*

*Front row: Messrs. W. Y. Sandeman, Civil Engineer; W. Yeaman; T. F. Cameron; T. H. Moffat; M. Wallace, Solicitor*

## Proposed Increase in Railway Freight Charges

*Further evidence before the Charges Consultative Committee concerning the application for increased railway and dock charges*

On January 4, members of the Transport Tribunal, sitting as the Charges Consultative Committee, began their hearing of the application by the B.T.C. for an increase in railway rates and charges for merchandise by goods and passenger train, and in dock and canal charges. In our issue of last week appeared a summary of the evidence given to the evening of January 10. Sir William Bruce Thomas, K.C., is Chairman.

### Objections of the Steel Industry

When the hearing was resumed on January 11, Mr. R. H. Shone, Director & Secretary of the British Iron & Steel Federation, submitted in writing the objections of the steel industry, and suggested that the application was against the public interest because it might jeopardise the Government policy of price stabilisation and set off an inflationary reaction, at a time when every effort was being made to avoid such a sequence of events with its repercussions on wages and other costs.

The effect on steel, said Mr. Shone, and, therefore, on the steel-using industries would be particularly serious as it was only with difficulty that prices were being kept at their present level, resulting from the substantial increases in cost which have occurred since devaluation. The effect on the heavy sections of the industry would be an increase in costs of 9s. 2½d. a ton, and any increase in coal prices might raise the cost of steel in the heavy sections to around 10s. a ton. The proposed increase in freight charges and its likely repercussions would also make it more difficult for our export industries to compete in the world market.

The estimate by the B.T.C. of a deficit of £30,000,000 in 1950 and 1951 was excessive and there was scope for a substantial reduction in the working expenses. In 1949 the working expenses of the railways totalled £311,000,000 and in the opinion of the Federation this figure could be substantially reduced by a drive for economy in the number of staff employed and by the curtailment of uneconomic services. There was no evidence that the Commission had made or was proposing to make any serious attempt to effect these economies.

Referring to the fact that increased staff since the war were handling less traffic than in 1937, Mr. Shone said the Federation recognised that reduced hours of work and extended holidays were adverse factors, but these factors should be offset by an increased productivity of labour. Since the war, other industrial concerns had greatly increased the productivity of their labour by reorganisation and the adoption of modern methods, and there was no reason why the B.T.C. should not do the same.

Since 1947 there had been a substantial increase in National production, though there was no corresponding increase in the tonnage of goods carried by the railways, and the failure of the railways to capture this additional traffic was due to the rise in railway rates in October, 1947, which had caused a loss of traffic from rail to road. Further increases in industrial production were planned for 1950, 1951, and 1952, but the B.T.C. did not expect any increase in freight receipts in 1950, except from coal, coke, and patent fuels.

There should be an adjustment of the facilities provided for the declining merchandise and passenger traffics and some initial benefit from a start on road/rail co-ordination. The curtailment of expenses and the economies achieved by increasing the productivity of the labour force would go far to close the gap between receipts and working expenses.

Mr. Shone said it was believed the liquid resources of the B.T.C. were sufficient to carry on the undertaking without a subsidy. Provision could be made for recovering the accumulated deficit out of charges of approximately the present level when the new charges schemes were settled. He also gave the Committee details of the steel programme for 1950. This showed estimated consumption of steel for home production and export of 17,700,000 tons in 1950 as against 16,750,000 tons in the previous year.

### Effect on Steel Prices

Asked by Mr. Lionel Heald, K.C., for the B.T.C., what the steel industry would do if the increases were made, Mr. Shone said he thought they would put up the prices of iron and steel. There would be no grounds for not raising steel prices.

Mr. Heald asked whether the industry had taken into account the importance of steel prices in the export drive, and suggested that the proper course, and the course they would adopt in fact, would be that the industry would absorb these extra costs.

Mr. Shone insisted on his view that an increase in the price of steel would be inevitable.

Mr. Heald then produced statistics showing the recent profits of the steel industry and asked whether in view of these the industry would have to queue up with the N.C.B. and other nationalised industries for relief in relation to railway rates.

Mr. Shone said that the profits of the steel industry were examined by the Ministry of Supply, which fixed the prices of steel, and he agreed that it would be a matter for the Ministry of Supply to decide whether it would allow an increase in prices.

The hearing was then adjourned until January 12, when Mr. Heald said that from the statement by Mr. Shone it appeared that an increase in iron and steel prices was inevitable as a result of the proposed freight increase.

Mr. Shone said it was correct to say that previous freight increases had been followed by a rise in the price of steel, and in this case also there was every reason to expect, from the size of the increase and from the recent review of prices, that it would be followed by an increase in price.

Mr. Heald said that between 1937 and 1948, the net ton-miles in mineral, merchandise, and livestock traffic had increased by 25 per cent., and asked Mr. Shone whether these figures showed that the railways were doing much more work in connection with these goods than before the war.

Mr. Shone replied: "No," and said he thought that the volume of work and the labour employed was very much more closely related to the tonnage carried than to the ton-miles.

Mr. Joseph Latham, Director General of Finance, N.C.B., called by Mr. Diplock, said that the proposed increase would this year cost the Board some £2,200,000, including £1,000,000 on the cost of the annual purchase of stores, materials, and equipment, which was of particular concern to the Board at present in view of its effect on working costs and on the reconstruction programme.

The capital expenditure on the reconstruction programme was limited by the Government, and this programme would be retarded by the proposed increases in 1950 and the ensuing years. The Board estimated that this year it would have available for export or foreign bunkers about 22,500,000 tons of coal. About 18,000,000 tons would be transported over British Railways, in addition to about 2,000,000 tons of coke and patent fuel also expected to be available for export.

Mr. Latham said that the average additional cost of transporting all this coal-class traffic by rail to the ports would be about 1s. a ton. Export prices were governed by world competitive conditions, and the N.C.B. was disturbed about the prospects of an increase of this order. The main burden of the proposed increases would fall directly on the industrial and domestic consumers in this country. The delivered price of coal entered either directly or indirectly through electricity, gas, coke, patent fuel, or steel, into the cost of almost everything produced in this country, and, therefore, if an increase was found to be necessary, any relief from the increase given to coal-class traffic would be in the public interest.

### Industrial Opposition to Higher Charges

The opposition of many industrial and agricultural organisations to the proposed increases was stated in a memorandum presented by Mr. Bertram White, Technical Director, Federation of British Industries, and their representatives on the Traders' Co-ordinating Committee on Transport.

"It is a time of crisis for British industry," declared the National Federation of Clay Industries. "If prices rise, the benefits of devaluation will be lost, and if the Transport Commission is unable to devise the necessary economies, it should seek the assistance of independent industrial consultants."

Rubber, clothing, brewing, shipbuilding, and building organisations were among those objecting to increased charges.

The hearing was then adjourned until January 13, when Mr. R. Gresham Cooke, Director of the Society of Motor Manufacturers & Traders, said that the increased freight charges would seriously prejudice the attempt to maintain an export figure of 1,000 motor vehicles a day. The seller's market was showing signs of coming to an end, particularly in the hard currency areas, competition from France and Germany was becoming acute, and margins of a few shillings were important.

Nearly half the motor vehicles for export were transported by rail, and the increased freight charges would add a total of £8 6s. 4d. in the case of large



cars, and £4 11s. 7d. for small cars, to the cost to overseas buyers. Those figures would include the increases in freight costs of manufacturing materials and the rise in Customs dues consequent on the increased value of the export.

Mr. Arthur Haywood, Revenue Purchasing Officer to the British Electricity Authority, said that the Authority was believed to be the largest single user of railways and canals. The total additional cost of the increases for the year 1950-51 on all B.E.A. traffic was £1,700,800, or 13s. 2d. a ton. He thought that coal freight charges should be governed by preferential rates.

Mr. Wilfred B. Noddings, Deputy Commercial Manager, B.E.A., stated:

#### ESTIMATES OF BRITISH RAILWAYS GROSS RECEIPTS FOR 1949

Last week, on page 56, three tables, submitted by the British Transport Commission as part of its case for higher freight charges, were given to show, first, the breakdown of revenue from various activities in 1948 and 1949; second, the gross receipts of British Railways for 1948 and preliminary estimates for 1949 and 1950; and, third, the estimated yield of the proposed increase in charges. (We regret that in the table given last week showing the B.T.C. central administration expenses, including the expenses of management of British Transport Stock and Parliamentary expenses, the 1949 figure was given as 3.0 instead of 1.0. Also, in the table showing the estimated British Railways receipts for 1949, the figure for total railway traffic receipts should read 320.8, not 320.9.) Below we give a further table showing the final estimates of gross receipts of British Railways for 1949 as compared with the preliminary estimates given last week.

#### FINAL ESTIMATES OF GROSS RECEIPTS OF BRITISH RAILWAYS FOR 1949 COMPARED WITH THE PRELIMINARY 1949 ESTIMATES

	1949	
	Final estimates	Preliminary estimates
	£m.	£m.
<b>RAILWAY PASSENGER AND FREIGHT SERVICES</b>		
<b>Passenger Train Traffic</b>		
Passengers—		
Ordinary ... ..	96.0	95.9
Season tickets ... ..	11.6	11.7
Workmen ... ..	6.2	6.2
Total passengers ... ..	113.8	113.8
Parcels and other merchandise by passenger train ... ..	22.1	21.9
Mails ... ..	2.9	2.9
Parcel post ... ..	4.0	4.0
Total passenger-train traffic ... ..	142.8	142.6
<b>Freight Train Traffic</b>		
Merchandise ... ..	79.7	79.5
Minerals and merchandise ... ..	29.6	29.6
Coal, coke, and patent fuel ... ..	68.0	67.6
Livestock ... ..	1.5	1.5
Total freight-train traffic ... ..	178.8	178.2
Total Railway Traffic Receipts ... ..	321.6	320.8
Miscellaneous ... ..	3.7	3.7
Total Railway Passenger and Freight Services ... ..	325.3	324.5
<b>RAILWAY COLLECTION AND DELIVERY AND OTHER ROAD SERVICES</b>		
Railway collection and delivery of parcels and goods ... ..	8.4	8.3
Road haulage (general) ... ..	0.3	0.3
Total ... ..	8.7	8.6

"The cost of the increases will be passed on to consumers of electricity and the incidence of the increase will vary according to the distance from the coalfields and the nature of the supply. The need for increased productivity in industry involves wider and cheaper electric supply and this will be hindered by the increased charges."

Coal transport costs were now 15 per cent. of the total works costs of generating stations, and such high costs had led to consideration of siting generating stations at the coalfields and the bulk transmission of electricity to load centres. There was thus in the long run a danger of permanent loss to the railways of substantial coal traffic.

The committee adjourned until Tuesday, January 17, when the inquiry was resumed at the Institute of Civil Engineers, London, S.W.1.

#### Efforts to Economise

Sir Walter Monckton, K.C., on behalf of the British Iron & Steel Federation, opening the proceedings on January 17, asked if the position with regard to the B.T.C. deficit would right itself in the foreseeable future. Looking at the iron and steel industry, he said, which was among the great industries of the country, how important it was to the industry, how difficult was its position, how anxious it was to absorb cost, and how difficult it would be if these extra costs had to be put on it.

"Before the deficiency has become unmanageable the evidence we have sought to lay before you has been directed to that issue. We have sought to lay before you the probability of larger receipts for the Transport Commission and the possibility—and, I hope, the probability—of greater economy at the same time."

Sir Walter Monckton said that the British Transport Commission approach to the question of economy was very disappointing and its estimate of future economies, amounting to £2,000,000 to £3,000,000, was not enough. Industrial productivity had increased by 5 per cent. in 1949 and was expected to increase beyond that in 1950, and that degree of productivity had been achieved in spite of shorter hours and holidays with pay.

"Our submission is that efforts towards economy of the same intensity, and working to the same order of figures, should be looked for in the transport world. If the railways were up against it because this application failed, one cannot doubt that something in the way of economies more nearly approaching the 5 per cent., which we have got in industry, would be the order of the day."

It was not as though this matter of the greater productivity they were urged to achieve was something directed to industry alone. It was something, in the opinion of those qualified to judge, which was expected to other activities, such as transport.

Railway workshop staffs had risen from 121,000 in 1938 to 136,000 in 1948, and guards and signalmen and goods and cartage classes totally practically 190,000 in 1948, as compared with 170,000 in 1938. In the types of work where it had been possible to achieve greater productivity there was a greater number of railway staff employed. One would, *prima facie*, have expected substantial savings there, because in industry it was in those places where industry had managed to achieve these results.

Sir Walter Monckton, who had addressed the Committee for 3½ hr., concluded by asking the Committee to pause before inviting the Minister to grant the appli-

cation. The risks of aggravating the inflationary spiral were all-round and not only on the side of the railways. He submitted that it would be the wrong time to make a differentiation which excluded coal traffic, but not iron ore, limestone, etc., and the wrong time to make a differentiation between passenger and freight traffic.

Mr. W. J. K. Diplock, K.C., then put his case for the National Coal Board. Coal mining, he said, was now the third best-paid out of 13 graded industries—with only motor vehicles and printing before it—and average earnings per shift had increased nearly three times since the beginning of the war. Labour costs represented two-thirds of the price of coal production and were reflected in the cost to the consumer. Any further increase in the price of production must be reflected.

The hearing adjourned until Wednesday.

**NICKEL AND NICKEL-ALLOY TUBES FOR GENERAL PURPOSES.**—The series of British Standards for nickel and nickel-alloy products has been completed by the issue of B.S. 1531-3, "Nickel and Nickel-Alloy Tubes for General Purposes." The new standards cover malleable nickel, nickel-copper and nickel-chromium-iron tubes for general purposes. Copies of the standards are obtainable from the British Standards Institution, Sales Department, 24, Victoria Street, London, S.W.1, price 2s., post free.

**JOHN BROWN & CO. TO ACQUIRE FIRTH BROWN TOOLS.**—An agreement has been reached for the sale by Thos. Firth & John Brown Limited of its interests in the engineers' tools industry to John Brown & Co. Ltd.; it has been approved by the Minister of Supply under the Iron & Steel Act, as Thos. Firth & John Brown Limited will be nationalised if the Act remains in force. Thos. Firth & John Brown, equally with the English Steel Corporation, are owners of Firth-Vickers Stainless Steels Limited. The latter firm, with Samuel Fox & Co. Ltd., is constructing new works for rolling stainless-steel strip. The agreement will enable Thos. Firth & John Brown to call up the new finance as required, and if nationalisation takes effect, John Brown & Co. Ltd. does not repay until at least a year after Thos. Firth & John Brown securities have vested in the new Iron & Steel Corporation.

**CAPITAL INCREASE: THE ENGLISH ELECTRIC CO. LTD.**—The raising of further capital by The English Electric Co. Ltd., which was referred to in our January 6 issue, is to be carried out by a public order of debenture stock and a "rights" issue to ordinary stockholders. The ordinary issue is of 589,789 £1 ordinary shares at 35s. each in the proportion of one new share for every £6 of ordinary stock held on January 14. At an extraordinary general meeting on January 16, Sir George Nelson, Chairman, referred to the continued expansion of the business, and said that the 1949 figures would further emphasise this trend. The directors had been considering for some time the extent to which the high rate of incoming orders was likely to be maintained and the best means of obtaining flexibility in the capital structure so as to be in a position to meet the needs with which industry was confronted in these days. The total of about £4,000,000 now to be raised in debenture and ordinary capital would enable the amount of temporary facilities from their bankers to be reduced.

## Staff & Labour Matters

### T.U.C. Wages Policy

A conference of the executive committees of trade unions affiliated to the T.U.C. voted on January 12 on the wages restraint policy recommended by the General Council of the T.U.C. This policy provides for the suspension of wage claims and sliding-scale agreements until January 1, 1951, unless in the meantime the index of retail prices rises above 117 or falls to 106. An exception is the case of lower-paid workers, where the General Council considers there may be grounds for special treatment.

The result of the voting was 4,263,000 in support of the T.U.C. policy and 3,606,000 against. Nearly half the votes polled in support were from the T.G.W.U. and the General & Municipal Workers' Union. Among others voting in favour of wages restraint were the R.C.A., the A.S.L.E.F., and post office and distributive workers. About two-thirds of the textile workers are believed to have voted in favour, and some of the printing unions.

Most of the important unions with sliding-scale agreements are believed to have voted against the motion, including all but two of the building, and also the boot and shoe operatives' and hosiery workers' unions. The N.U.R., which recently pressed its claim with the Railway Executive for a £5 weekly minimum, also opposed the T.U.C. policy, as did the A.E.U. (which is one of the prime movers

in the claim of the C.S.E.U. for an increase of £1 a week for all its members) and the mineworkers, who had voted earlier in the week against wage stabilisation.

With such a small majority in favour of wage restraint, and taking into account the number of wage claims still outstanding, the General Council of the T.U.C. has a big task in persuading the affiliated unions to forgo their claims. Immediately the conference started, there was an attempt to postpone discussions on wages policy until after the general election, but this was defeated by a big majority.

### Stabilisation

Sir Harold Tewson, General Secretary, T.U.C., opening the debate, admitted that flexibility was necessary to meet the case of low-paid workers, for whom attempts should be made to establish incentive schemes; but even here vigorous restraint must be observed. It was not possible to allow unions with sliding-scale agreements to exercise those rights when others were asked to exercise restraint. The General Council was suggesting that wage rates, and not earnings, should be held stable, not merely during a slight rise in prices but also in the event of the price index falling.

At the same time, he said, the General Council was to intensify the campaign for increased efficiency in industry. They were convinced that total earnings could be increased side by side with productivity at

lower costs if wages were related to output. Sooner or later the unions would have to consider the whole question. They must rationalise their wages structure or deprive their people of advantages that could be gained under less traditional systems than now operated. First, it was necessary to create the greatest measure of stability, and, second, the unions must strive to increase productivity to provide a solid basis on which to start the preparation of fundamental plans for the future.

### N.U.R. Opposition

Mr. J. B. Figgins, speaking for the N.U.R. in opposition to the policy, said that the support given by his union to the T.U.C. policy at the Bridlington congress was conditional on Government action in bringing down prices and profits. The General Council report did not deal with profits; it only dealt with wages, salaries, and dividends.

The N.U.R. official organ, *The Railway Review*, in its January 13 issue, referring to the N.U.R. minimum wage claim, states: "The matter is of exceptional interest in that our union is going forward with the claim entirely on its own. Developments connected with it will be closely watched, particularly by the lower-paid grades. The claim now made is fully justified, for no one will deny that on present-day standards there must be many grades amongst the lower-paid sections who find it difficult to make ends meet."

## Past and Present Headquarters Stores Staff at Kings Cross



Mr. F. H. Colebrook, Stores Superintendent, Eastern & North Eastern Regions, British Railways, recently invited retired headquarters members of the salaried staff to meet him and his assistants at a Christmas gathering at the Stores Superintendent's Conference Room, Wellers Court, Kings Cross. Among those present were Mr. A. P. Ross, who was Chief Stores Superintendent, L.N.E.R., 1929-45, and Mr. H. A. Butler, formerly Traffic Stores Superintendent

Back Row (left to right): Messrs. A. H. Rice, A. J. Stevens, C. Thom, W. Iley, T. J. Warrington, P. Rudken, H. J. R. McCallum, E. A. Davis, J. V. Aspinall  
 Middle Row: Messrs. A. J. Ewer, E. V. Symons, E. R. Loyd, A. J. Russell, C. Cruttenden, C. H. Jeune, G. Bell, C. J. Pearce, E. Pierson, C. G. Salvidge, W. J. Crossley  
 Front Row: Messrs. L. Finch, A. W. Ciclitira, F. C. Ley, A. P. Ross, F. H. Colebrook, H. A. Butler, R. P. Laxton, P. C. Kitchener, J. Davies

## Value of Geothermic Electric Power in Italy

*The use of steam from boreholes to produce part of the power required by the railways*

Consumption of electric power by the Italian State Railways reached its peak of 1,574,000,000 kWh. in 1942, mainly due to the war effort. The rise had been gradual, from 928,000,000 kWh. in 1938, to 1,418,000,000 kWh. in 1940, and 1,540,000,000 kWh. in 1941. As a result of war damage, dismantling of the overhead conductors and power stations by the Germans, and the loss of certain electrified lines in the territories ceded to France and Yugoslavia after the war, consumption dropped to 556,000,000 kWh. in 1946. In 1947 it rose to 846,000,000 kWh. through rehabilitation of electrified lines and the increase in electric locomotives and motor coaches in service. The rise in electric power consumption has continued unabated since then, although not unaffected by the persistent drought and consequent shortage of water power in 1948 and 1949.

Water power is the main source of the current consumed, but steam-operated power stations do not provide the whole of the remainder. Four remarkable power stations in Italy have been responsible for some years, except during the last part of the war, for an important part of the power supplied to the Italian State Railways; these are in Western Tuscany, at Larderello, Castelnuovo di Val di Cecina, Sasso Pisano, and Serrazzano. Power is derived from a mixture of water, steam, and natural gas from boreholes in an area of some 77 sq. miles, the centre of which is Larderello, twelve miles south of Volterra, terminus of a branch from Cecina to the Pisa-Rome main line. Passenger services are operated by railcars between Cecina and Saline di Volterra, where passengers change into mixed trains hauled by one of the three standard gauge 0-6-0 rack steam locomotives in use on the section from Saline di Volterra to Volterra, some twelve miles.

The line rises from Saline to Volterra by numerous curves and steep gradients necessitating rack working, which extends the whole way to Volterra Station, at an altitude of 1,640 ft. Trains take 40 min. to cover the ascent, and 30 min. for the descent; there are five trains daily each way. The locomotives date from 1906, and were built by the Swiss Locomotive & Machine Works, Winterthur. From the town of Volterra, which commands an extensive view over the Tuscan hill country, the white fumes can be seen rising from the depression in the south where Larderello is located.

Scientists do not agree on the origin of the phenomenon, but it is believed that the boreholes, known locally as *soffioni*, are directly related to the magma in the interior of the earth. The white fumes escaping are a blend of water, steam, and gas. The output varies from hole to hole up to 180 tons per hour, while the pressure varies between five and 30 atmospheres, and the temperature between 320° F. and 490° F. The velocity at which the fumes escape with a deafening noise is about 400 ft. per sec.; the maximum recorded hitherto has been 1,312 ft. per sec.

To obtain the steam required for commercial and industrial use, holes are drilled down to 1,000 ft., but some have been sunk to 3,000, and greater depths are envisaged for the future. Productive

boreholes in the Larderello area now number 140, their aggregate steam capacity being 5,240,000,000 lb. per hour. Four new boreholes are now being drilled with rotary drills from the United States. From the boreholes pipelines lead the steam direct to the power stations, where, at a pressure of 4½ atmospheres and a temperature of 390° F. it is used in turbines coupled to alternators. The exhaust from the turbines is condensed in three cooling towers and then processed in cooling tanks in which borax crystallises out of the fluid. Borax is a secondary of the fumes, part of which is led direct to the cooling towers and not used in the power house.

The four power stations total an installed power of 150,000 kW. and have an annual capacity of approximately 1,000,000,000 kWh., compared with Italy's total power production of 20,573,700,000 kWh. in 1947, of which 18,903,700,000 kWh. was hydro-electric. The Larderello power station contains seven alternator groups. Another power station is being built here with an installed power of 140,000 kW. and an estimated annual

capacity of 900,000,000 kWh. Three cooling towers will receive the exhaust steam from the new power house.

Great progress has been made in recent years in this area in the rational utilisation of steam to generate electric power, resulting in the reduction from 41·8 lb. of steam to 22 lb. per kWh. produced. Construction of yet a further power station with an installed power of 150,000 kW. is envisaged.

Much of the power produced by the four stations is reserved for the Italian State Railways, which own 70 per cent. of the share capital of the company which owns and operates the steam wells, power plants, and borax works in the area. During the war the Germans systematically destroyed the power houses, boreholes, derricks, and borax works, and so on. Only 3 per cent. of the plant survived, and reconstruction is not yet complete.

The existence of the vapour has been known of for more than a century. It was first exploited industrially for the extraction of boric acid by the Counts of Larderello, industrialists of French origin settled at Leghorn; hence the name Larderello. The first boric acid was obtained in 1827. Not till early in this century was the possibility of using the steam for the production of electric power considered, and the participation of the Italian State Railways dates from its inception.

## Unification of Federal Railways, Western Germany

All lines of the former Reichsbahn, now the German Federal Railways, in Western Germany, were placed under a unified management with effect from October 15. This was facilitated by a decision of the Railway Traffic Council of the French Zone, on October 8, to alter as from October 15, the name "Betriebsvereinigung der südwestdeutschen Eisenbahnen" (Working Union of the South Western German Railways), which had been adopted for the railways in the French Zone, to "Deutsche Bundesbahnen-Betriebsvereinigung der südwestdeutschen Eisenbahnen" (German Federal Railways Working Union of the South Western German Railways).

On the same day the agreement as to technical unification of the railways in the three zones of Western Germany, concluded at Speyer on September 23 between delegates of the Anglo-American and French Zones, was made operative, in accordance with the decision of the Baden-Baden conference referred to above. This agreement envisaged the establishment of a joint central office for allocation of rolling stock, of a joint repair organisation, and for centralisation of the stores, motive power, way and works, and staff departments.

This does not yet imply, however, complete amalgamation between the railways of the three zones. In contrast with the Federal Railways in the Anglo-American Zone, the railways in the French Zone constitute public entities owned by the three provinces ("Länder") under French occupation (Baden, Württemberg, and the Palatinate). Complete amalgamation will not take place until the impending Federal Railway Law, which is now being considered as of extreme urgency, has been passed.

It is believed that no solution will be reached until the middle of 1950. Since all the chief railway officers in the three zones are in favour of unification at the earliest possible moment, it has been de-

cided to place the accountancy of the three railway systems on a common basis as from January 1, 1950.

Difficulties are likely to result from organisational divergencies. The tendency in the Bi-Zone is towards centralisation, while decentralisation of the services is favoured in the French Zone. The solution, however, will be reached, probably, not in accordance with political views, but on the basis of financial considerations.

A proposal for the establishment of a number of divisional managements has already been submitted by the French Zone and is to be discussed in the near future. Unification of headquarter departments is to follow immediately on the passing of the Federal Railway Law. The Federal Minister for Transport, or his deputy, is to attend the future meetings of the Railway Traffic Council of the French Zone, over which he will probably preside, as he has hitherto presided over the meetings of the central management of the German Federal Railways in the Bi-Zone. This will result in co-ordination in all important matters affecting the whole of the railways in Western Germany.

**TESTS FOR WATER USED IN STEAM GENERATION.**—The British Standards Institution has issued British Standard 1427: "Tests for Water Used in Steam Generation: Group A, Control Tests, for which No Laboratory is Required." These control tests have been drawn up as part of a series of British Standard publications dealing with boiler-water treatment which, when completed, will cover also laboratory tests (Group B), and special tests for investigation purposes (Group C). Copies of the Group A standard may be obtained from the: British Standards Institution, Sales Department, 24, Victoria Street, London, S.W.1, price 7s. 6d. each, post free.



## Notes and News

**Junior or Assistant Sectional Engineer Required.**—A junior or assistant sectional engineer, between 25 and 35 years of age, is required for a British railway company operating in Chile and Bolivia. See Official Notices on page 87.

**Senior Estimator Required.**—Cravens Railway Carriage & Wagon Co. Ltd., Darnall, Sheffield, have vacancy for a senior estimator. Candidates must be experienced in rolling stock construction. See Official Notices on page 87.

**Metrovick Lamp Contract.**—The Western Region of British Railways has awarded a part contract for electric lamps over the period January 1 to June 30, 1950, with Metropolitan-Vickers Electrical Co. Ltd., London, W.C.2.

**Crown Agents for the Colonies.**—An assistant accountant and assistant traffic superintendent, between 25 and 35 years of age, are required by the railway department of the Federation of Malaya for one tour of three years with prospect of permanency. See Official Notices on page 87.

**Antofagasta (Chili) & Bolivia Railway.**—The directors have decided to pay on February 17 a dividend of 2½ per cent. on the 5 per cent. cumulative preference stock for the half-year ended December 31, 1939. Reference to arrears of dividend was made at the annual general meeting on September 27, 1949, reported in our issue of September 30 last.

**Estimate of Channel Tunnel Cost.**—M. Govon, an official of the S.N.C.F. who is also a director of the French Channel Tunnel Company, expressed the view at a conference held in Paris recently that if British trade relations on the Continent increased much more, the Channel Tunnel would become a necessity. He estimates that a double track railway tunnel would cost about £86,000,000 and that the cost for a tunnel for road traffic would be prohibitive.

**Application by "A" and "B" Licence Holders for Original Permits.**—The Road Haulage Executive draws attention to the position of "A" and "B" licence holders who apply for original permits although they are not entitled so to apply under the terms of Section 53 of the Transport Act. When the Executive refuses to grant an original permit in such a case the applicant has no right to request the Executive to serve a Notice of Acquisition in accordance with Section 54. Requests to serve Notices of Acquisition under Section 40(4) or Section 42(1) must be made in all cases before January 31.

**Glyn, Mills & Company.**—The report of Glyn, Mills & Company for the year ended December 31, 1949, shows profits of £152,854, as against £155,990 for last year, after provision for taxation, bad debts, changes in value of investments, and other contingencies. After adding a £18,540 balance brought forward, and making adjustments for income tax, £43,725 each has been appropriated for interim and final dividends, both at 7½ per cent., which is the same as for last year. An additional £50,000 has been transferred to reserve for contingencies as before, and the balance carried forward is £33,944. Total assets are £85,799,201 (£84,219,452) and include deposits of £76,960,247 (£75,030,578). Advances total £13,780,130 (£13,271,315), cash £9,611,240

(£10,391,513), money at call £23,160,000 (£15,701,000), bills discounted £2,399,276 (£2,499,029), and Treasury Deposit Receipts £5,000,000 (£10,000,000).

**Tilling Motor Services Limited.**—At a recent extraordinary general meeting, a special resolution was passed to the effect that the company be wound up voluntarily, and that Mr. George Muir Kydd, of 15, Curzon Street, London, W.1, be appointed liquidator.

**Crown Agents for the Colonies.**—Grade II clerks, not over 30 years of age, are required by the East African Railways & Harbours Administration for the transportation department, for one tour of 40 to 48 months with prospect of permanency. See Official Notices on page 87.

**Derailment at Châlons-sur-Marne.**—Sabotage is suspected as the cause of the derailment early on January 16 of a Strasbourg-Paris express near Châlons-sur-Marne. Three passengers were injured and both lines were blocked. The police state that screws and fish-plates appeared to have been removed.

**Waverite Plastics at Olympia.**—At the Hotel, Restaurant & Catering Exhibition, which opens at Olympia, London, on January 25, and will remain open until February 3, the Waverite Limited stand will be used to demonstrate the properties of Waverite decorative laminated plastics which make them particularly suitable as surfaces for walls, tables, bars, counters, and so on. Among the advantages claimed for Waverite table tops are that they cannot be harmed by contact with hot teapots and that they are not stained by spirits and fruit juices.

**Steel Company of Wales.**—Trading profit for the second year of trading, ended October 1, 1949, was £2,113,865, against £1,488,278 for the previous year. The sum of £940,576 against £606,858, was carried to the consolidated profit and loss appropriation account. By reason of initial allowances there is no liability to profits tax and income tax, for which no specific provision has been made. An ordinary dividend is proposed of 4 per cent. for the year, against 4 per cent. for the previous period of 17 months, carrying forward £944,055, as against £268,093 brought in.

**Dollars from the Tourist Industry.**—Mr. Harold Wilson, President of the Board of Trade, remarked in Manchester on January 13 that the tourist industry was now our biggest net earner of dollars. In the first eleven months of 1949, stated Mr. Wilson, 147,000 dollar visitors came here, as compared with 113,000 in the same period of 1948, and a further 31,000 passed through in transit. They spent £16,500,000, as compared with £11,700,000 in the same period of 1948, besides their expenditure on British ships and aircraft. Any improvement in holiday facilities for our own people played its part in the development of tourism from overseas.

**East Kent Road Car Company.**—Presiding at the annual general meeting of the East Kent Road Car Co. Ltd., whose results were given in our January 6 issue, the Chairman, Mr. R. P. Beddow, said that their fares had now reverted to the 1939, or even to the 1914-18 level; it was too soon to judge the effect of fares reductions. The Minister of Transport had said that the real solution of the railways difficulties was the pooling of road and rail receipts,

which could mean only that the road would make good rail losses. The Minister had praised nationalised industries whose prices had been raised by 55 per cent. over pre-war, but had not mentioned the privately-operated provincial bus industry with fares mostly at the first world war level.

**Broom & Wade.**—The net profit of Broom & Wade Limited for the year ended September 30, 1949, was £305,631, as compared with £259,867 for last year. The final ordinary dividend is maintained at 15 per cent., again making 22½ per cent. for the year.

**P.W.I. Dinner.**—The annual winter dinner of the Permanent Way Institution will be held on Saturday, January 28, at the Railway Executive Headquarters, 222, Marylebone Road, London, N.W.1, at 5.45 for 6.15 p.m. Tickets, price 15s. each, can be obtained from Mr. J. A. R. Turner, Corresponding Secretary, London Section.

**Vulcan Side-Tank Locomotives for India.**—We are informed that the ten side-tank locomotives recently built by the Vulcan Foundry Limited for India, which were described and illustrated in our January 13 issue, have been fitted with the Ajax system of grease lubrication on the coupled axleboxes, the connecting rod big ends, and the coupling rods. The Ajax lubricator is made by Whitelegg & Rogers Limited, Grand Buildings, Trafalgar Square, London, W.C.2.

**Steel Company of Wales: Progress at Margam.**—During 1949 the Steel Company of Wales made considerable progress in the reconstruction of the existing Margam steelworks and the construction of the New Abbey Works at Margam and the Trostre Works at Llanelly. At Abbey and Trostre sites the erection of buildings has been going on steadily throughout the year, and now these two works are beginning to take on their final shape. In the existing works at Margam some items of new plant have already been brought into operation, and 1950 will bring the completion of even more new plant.

**Increase in Air Travel.**—Revenue passengers carried by the British air corporations during April to September, 1949, totalled 561,569, which compares with 462,284 in the same period of the previous year. This represents an increase of about 25 per cent. All services showed an increase except the North Atlantic run. For the same period charter firms carried 54,747 passengers against 11,292 in 1948. The deficit of the British European Airways Corporation for the financial year ended March 31, 1949, was £2,763,185, and during the current year a serious effort is being made to bring the deficit down to the target figure of £1,500,000.

**Steel Output Record Again Broken.**—Last week, there was a reference in an editorial note to the fact that, with an output slightly more than 15½ million tons, the steel industry of Great Britain had once more created a record and produced above the maximum target set for the year. This means that for the third year in succession British steel producers have been more than equal to Government demands, and at the present rate of increase steel production in 1950 may well be 16 million tons. In a statement on the prospects for 1950, the British Iron & Steel Federation states that this further increase will be due largely to the completion of new plant,

## OFFICIAL NOTICES

None of the vacancies on this page relates to a man between the ages of 18 and 50, inclusive, or a woman between the ages of 18 and 40, inclusive, unless he, or she, is excepted from the provisions of the Control of Engagement Order, 1947, or the vacancy is for employment excepted from the provisions of that Order.

## Crown Agents for the Colonies

**CLERKS, GRADE II** required by the East African Railways & Harbours Administration for the Transportation Department, for one tour of 40-45 months with prospect of permanency. Salary according to age, qualifications and experience in the scale £462 to £18-£570 a year. Free quarters and passages and liberal leave on full salary. Superannuation Fund. Outfit allowance £30. Candidates, not over 30 years, must have received a good general education up to matriculation or School Certificate standard, and should have a good working knowledge of one or more branches of railway traffic working. A knowledge of both commercial and operating work would be an advantage and candidates who have qualified by examination in one or more railway subjects will be preferred. There is a good prospect of promotion with the possibility of eventual senior appointment in the Administration for those who show themselves suitable. Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper, to the Crown Agents for the Colonies, 4, Millbank, London, S.W.1, quoting M/N 21465/3E on both letter and envelope. The Crown Agents cannot undertake to acknowledge all applications and will communicate only with applicants selected for further consideration.

and that the shortage of steel, which is now no longer acute, should be at an end within twelve months, with the possible exception of steel sheets. Since the volume of orders for steel reached its highest peak a year ago, there has been a decline in orders placed with British steel firms, and an article in the current issue of the Federation journal appeals once more for the abolition of the control of steel distribution introduced during the war.

**Institute of Transport, Yorkshire Section, Silver Jubilee.**—On Tuesday, January 10, at the Great Northern Hotel, Leeds, the Yorkshire Section of the Institute of Transport welcomed the President of the Institute, Brigadier-General Sir H. Osborne Mance, on the occasion of the section's silver jubilee year annual dinner. The President responded to the toast of "The Institute of Transport" proposed by Mr. John Benstead, Deputy Chairman of the British Transport Commission, and the Chairman of the section proposed the toast of "Our Guests." Mr. C. H. Morris, Vice-Chancellor of Leeds University, responded.

**Rail and Road Tours in Ireland.**—The advance 1950 tours programme of Coras Iompair Eireann gives details of six- and nine-day inclusive motorcoach tours, day and half-day excursions from tourist centres, a variety of rail-and road round trips, and general travel information. The inclusive tours comprise accommodation at the C.I.E. (former Great Southern Railway) hotels in the loveliest parts of Munster and Connacht. On the front cover of the programme is an attractive coloured map showing C.I.E. rail and road services and the locations of C.I.E. hotels. Particulars of these and other facilities may be obtained from the C.I.E. Public Relations Department, 59, Upper O'Connell Street, Dublin.

**S.M.T. Continental Tours.**—Of special interest to tourists who intend to visit the Continent this year is the announcement by Scottish Motor Traction that, in conjunction with Thos. Cook & Son Ltd., this company will offer a selected list of tours covering many famous cities and beauty

**ENGINEERING OFFICE** having good connections with purchasing offices, consulting engineers and overseas Governments in London, desires further representations of first class manufacturers of railway specialities.—Box 588, The Railway Gazette, 33, Tothill Street, London, S.W.1.

**SENIOR ESTIMATOR** required, fully experienced in Rolling Stock Construction. Permanent post for suitable applicant. Superannuation scheme operating. Apply in writing stating age, experience, and salary required to CRAVENS RAILWAY CARRIAGE & WAGON CO. LTD., Darnall, Sheffield, 9.

**TRACTION** Recording Instrument for Sale. Everett Edgcombe 3-unit Train grapher. Ammeter with external 200 and 1,500 amp. shunts. Volts 0/75, 0/750 with built-in resistance. Speedometer for D.C. or A.C. transmitter. In hardwood case contained within anti-vibration travelling frame. Overhauled. Preliminary enquiries to Box 597, c/o The Railway Gazette, 33, Tothill Street, London, S.W.1.

**JUNIOR OR ASSISTANT SECTIONAL ENGINEER** required for British Railway Company operating Chile and Bolivia. Candidates should have passed Sections (A) and (B) of Institute of Civil Engineers examination and have had some experience in maintenance and construction of track work, bridges and buildings. Aged about 25/35 years, married or single. Commencing salary, £600/£700 p.a., according to qualifications and experience, with possibilities of promotion. Free quarters, messages, allowances, etc., provided. Applications with full particulars of qualifications and experience and copies of any testimonials held to be sent to Box 3259, c/o Charles Barker & Sons Ltd., 31, Budge Row, London, E.C.4.

spots in Italy, France, Switzerland, Austria, Belgium, Luxembourg, and Germany. The tours will operate from Edinburgh. On the Continent special coaches providing exceptional vision and a high degree of comfort will be used under the supervision of Thos. Cook & Son Ltd. Every assistance will be given in procuring passports and visas. The programme will commence on April 3, but because there is likely to be a heavy demand, intending tourists are being advised to make early application for accommodation.

**Electrification in Western Germany.**—In addition to the lines in the Ruhr and the adjoining part of the Rhineland already scheduled for electrification within the first stage of the conversion programme mentioned in our issue of August 19, 1949, the Cologne-Bonn portion of the double-track Cologne-Coblenz-Mainz-Frankfurt main line is to be electrified. The distance between Cologne and Bonn is 21½ miles.

**Part Closing of County Down Railway.**—When the last train pulled out on the Belfast & County Down Railway service on January 15 it marked the closing of about 45 miles of the 76 miles of track at present operated. Road transport will in future replace the train services. The line from Belfast to Donaghadee will also be closed soon and this will leave only the Belfast to Bangor part of the system in operation. The town of Newcastle, at the southern end of the line, will still have its railway service provided by the G.N.R.(I.) The connection from the south is through Scarva and Banbridge, and, although the G.N.R.(I.) terminus on this branch is at Castlewellan, four miles from Newcastle, the company has running powers over the small stretch of the Belfast & County Down Railway, which are being retained.

**Position of Railway Executive as Landlord and Employer.**—At a recent hearing of an application by the Railway Executive for the ejection of a retired ganger from a house at Polish, Inverness-shire, on the ground that the house was required for another railway employee, it was stated for the tenant that under the Rent Restriction Act the person for whom the

**WANTED:** Good Secondhand Turntables, standard gauge, suitable for ordinary 20-ton wagons.—Reply Box 586, The Railway Gazette, 33, Tothill Street, London, S.W.1.

## CROWN AGENTS FOR THE COLONIES.—

(a) Assistant Accountant and (b) Assistant Traffic Superintendent required by the Railway Department of the Federation of Malaya for one tour of three years with prospect of permanency. Commencing salary including expatriation pay according to qualifications and experience in the scale \$510 a month rising to \$770 a month. Plus cost-of-living allowance for single men \$150 a month and for married men up to \$310 a month. (Malayan dollar 2s. 4d.). Free passages. Liberal leave on full salary. Candidates between 25 and 35 years of age must have had:—(a) Seven years training and practical experience in Accounts Department of a Railway and be fully conversant with Goods and Coaching Audit work. Must be familiar with preparation of Revenue and Expenditure Accounts and Returns, preparation and use of statistics. Should have knowledge of mechanical accounting systems, control and stock recording of stores costing as applied to Mechanical Engineering Workshops. (b) Thorough training and considerable experience of Traffic Operating and Commercial work on a Railway, with a sound knowledge of Railway rules and Regulations and of the principles of Station accounting. Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper, to the Crown Agents for the Colonies, 4, Millbank, London, S.W.1. Applicants for (a) should quote the reference M/N 23277/3E and (b) should quote M/N 23279/3E on both letter and envelope. The Crown Agents cannot undertake to acknowledge all applications and will communicate only with applicants selected for further consideration.

house was wanted must be employed by the landlord, and that the Railway Executive was not the landlord but only the employer. The Sheriff-substitute granted decree for ejection, taking the view that the Railway Executive was acting only as a department of the B.T.C., the owner of the house, and was therefore both employer and landlord. The tenant then appealed. Sustaining the appeal at Fort William on January 10, the Sheriff said that the Commission was not the employer of the person for whom the house was required, and that the Railway Executive was not the owner of the house. He quoted from the Transport Act, 1947, which states:—"The functions of the B.T.C. in relation to the engagement, control, and discharge of railway servants are delegated to the Railway Executive. The Executive shall, to the exclusion of the Commission, be treated as the employer of any officers or servants."

**British Institute of Management: Change of Address.**—On January 10, the address of the British Institute of Management was changed to Management House, 8, Hill Street, London, W.1. The telephone number is Grosvenor 6000.

**Stoppage of Irish Steamer Services.**—As a result of a dispute by crews who complain that the withdrawal by the British & Irish Steam Packet Company of one of the ships on the Dublin run will mean longer hours, all sailings by the company's ships between Liverpool and Dublin and Belfast and Fishguard and Cork. British Railways services to Ireland are not affected.

**British Institute of Management and Institute of Personnel Management.**—An agreement has been signed by Sir Charles Renold, Chairman of the British Institute of Management, and Miss Anne G. Shaw, President of the Institute of Personnel Management, providing for co-operation in matters of common interest to the two Institutes. The independent status and professional activities of the I.P.M., which was founded 37 years ago and has a membership of over 3,000, continue unchanged. The B.I.M. will encourage persons seeking a professional career in

personnel management to join the I.P.M. A joint committee will deal with information and research questions in the field of personnel management.

**Cheap Day Ticket Facilities.**—As from Monday, January 16, the restriction on return travel from some Southern Region London termini by cheap day and certain excursion tickets between 4.30 and 6.30 p.m. has been removed. At the Eastern Section London Bridge, Charing Cross, Cannon Street, and Waterloo stations the restriction will remain in force between 5 and 6.30 p.m., though cheap day and certain excursion tickets will be available for return journeys between 12 noon and 1.30 p.m. on Saturdays on all Sections.

**Trade Mission to Pakistan.**—Britain has accepted an invitation to send an industrial mission to Pakistan. It will be led by Lord Burghley, will arrive at Karachi on February 26 and will stay about three weeks. It will report on the steps which may be taken to assist the flow of trade in both directions and, particularly, on the way in which the United Kingdom can assist further in schemes which the Pakistan Government have under consideration for economic development (see also page 81).

### Forthcoming Meetings

January 20 (Fri.)—Institution of Railway Signal Engineers, in the London Transport Executive Signal School, Earls Court Station, S.W.5, at 6.15 p.m. "Principles of Power Point Control and Detection," by Mr. H. W. Hadaway.

January 24 (Tue.)—Institution of Civil Engineers, Great George Street, Westminster, S.W.1, at 5.30 p.m. Film "Flooding in South-East Scotland—Repair Work for Restoration of Railway Traffic," with a commentary by Mr. J. S. Robertson.

January 25 (Wed.)—Railway Students' Association, London School of Economics & Political Science, Houghton Street, Aldwych, W.C.2, at 6 p.m. "Canada and its Railways," by Mr. Jas. B. Thom, European Manager, Canadian National Railways.

January 25 (Wed.)—Permanent Way Institution, London Section, at Denison House, 296, Vauxhall Bridge Road, S.W.1, at 6.30 p.m. Films on "The Permanent Way Institution" and "Floods in the North."

January 25 (Wed.)—British Railways, Southern Region, Lecture & Debating Society, at Chapter House, St. Thomas' Street, London Bridge, S.E.1, at 5.45 p.m. "An Engineering Story," by Mr. E. V. Brady.

January 25 (Wed.)—Institute of Welding, at the Institution of Civil Engineers, Great George Street, London, S.W.1, at 6 p.m. "The Welding of Light Alloys in Structural and Similar Applications," by Mr. W. K. B. Marshall.

January 26 (Thu.)—Institution of Railway Signal Engineers, at Hunts Bank, Manchester, at 6.45 p.m. "Principles of Power Point Control and Detection," by Mr. H. W. Hadaway.

January 27 (Fri.)—Institution of Mechanical Engineers, Storey's Gate, St. James's Park, London, S.W.1, at 5.30 p.m. Discussion on "Some Factors in the Use of High Temperatures in Gas Turbines," by Mr. T. W. F. Brown.

## Railway Stock Market

Markets have again shown caution during the election campaign, with buyers holding off and British Funds continuing to lose ground, most sections were reactionary. Sentiment in the Gilt-edged market was again affected by indications that big financial institutions are postponing buying until after the election. It should then, of course, be possible better to assess the market outlook, and also whether the election result will accelerate the tendency to higher interest rates. Another factor affecting the Gilt-edged market is that in March the first compensation allocation of British Coal Stock is to be made.

Industrial shares have again eased, due more to the small demand than to selling, which has been very moderate. Nevertheless, in many cases shares are in short supply in the market, and consequently prices may respond strongly to only a moderate improvement in demand.

La Guaira & Caracas were prominent on the directors' request to stockholders to permit negotiation of the sale to the Venezuelan Government for not less than £760,000. This does not mean that this sale price will necessarily be secured; and negotiations with the Venezuelan Government may prove protracted. Nevertheless, on the base of a price of not less than £760,000 and taking into account assets not expected to be included in the deal, the total would provide for repayment of the debentures at par and also £95 for every £100 of ordinary stock. If the sale were effected on these terms, compensation of £40,000 would be demanded for the staff and directors, which would reduce the payout for each £100 of ordinary stock by approximately £81. Before the directors' statement, the ordinary stock was changing hands around £78½ and the debentures around £88.

Bolivar "A" debentures have been active at £88, and the "C" debentures were £54. Antofagasta ordinary and preference have eased to 7½ and 46½ respectively. In the absence of any further news of the take-over talks, United of Havana 1906 debentures eased to 25½. Canadian Pacific at 27½ have reflected the downward trend in dollar stocks, though White Pass 6 per cent. debentures were better at 65. Canadian Pacific 4 per cent. preference

stock eased to 61½ and the 4 per cent. debentures to 94. Central Uruguay ordinary remained at 10, but Manila "A" debentures at 76 and the preference shares at 6s. 6d. reflected moderate selling.

Leopoldina stocks kept around the same levels as a week ago, with a little speculative buying of the ordinary and preference, though the former eased to 8½ and the latter at 25½ was uncertain. The 4 per cent. and 6½ per cent. debentures were 89½ and 125 respectively. Leopoldina Terminal debentures were 95 and the ordinary units 2s. 6d. Although it may be hard to determine the pay-out terms for the various stocks, it seems reasonable to expect that Leopoldina 4 per cent. debentures and also the Terminal company's debentures will be paid out at par. Brazil Rail gold bonds were 42. Great Western of Brazil shares sold around 133s. 9d. and remain well below their estimated pay-out value. San Paulo 10s. ordinary have come back to 14s. 10½d.

Road transport shares generally have been firm and held recent gains, the market continuing to assume that 1949 dividends will be maintained and that there will be no further acquisitions by British Transport. Southdown were firm at 125s. West Riding 66s., and Lancashire Transport 82s. B.E.T. deferred stock has shown moderate fluctuations around 46s. British Transport stocks have fallen back with British Funds, 3 per cent. Transport at 86½ now being nearly £3 below the level at the beginning of this month.

Iron and steel shares showed moderate but fairly general declines, ranging from 3d. to 1s. Sentiment was affected less by the possibility of a reprieve from nationalisation than from indications of rising costs due to factors outside its control; it is also doubtful if individual companies will be able to maintain net profits, despite the probability that steel production this year will achieve another record. Dorman Long has eased to 31s., Stewarts and Lloyds to 52s. 3d., United Steel to 26s. 3d., and Thomas & Baldwins to 13s. 3d. Profit taking eased John Brown to 23s. 9d. and Firth Brown to 70s.

Locomotive builders and engineers have been steady, with Vulcans at 18s. 9d., North British 20s., Beyer Peacock 19s. 6d., Wagon Repairs 16s. 3d., Gloucester Wagons 50s., and Birmingham Wagons 28s. 9d.

Traffic Table of Overseas and Foreign Railways

	Railways	Miles open	Week ended	Traffics for week		No. of week	Aggregate traffics to date			
				Total this year	Inc. or dec. compared with 1947/48		Total	Increase or decrease		
							1948/49			
South & Central America	Antofagasta...	811	8.1.50	£ 51,560	—	£ 9,840	1	£ 61,324	—	£ 17,830
	Costa Rica ...	281	Sept., 1949	30,929	—	3,154	13	102,621	—	8,998
	Dorada ...	70	Nov., 1949	23,909	—	8,758	48	320,787	+	14,879
	Inter. Ctl. Amer. ...	794	Oct., 1949	\$579,232	—	\$376,578	43	\$10,110,125	—	\$960,633
	La Guaira ...	22½	Dec., 1949	\$95,154	—	\$20,009	52	\$1,262,514	—	\$11,002
	Nitrate ...	382	31.12.49	20,797	+	2,523	52	464,768	—	—
	Paraguay Cent. ...	274	30.12.49	£ 134,628	+	£ 34,127	26	£ 3,735,127	+	£ 1,030,031
	Peru Corp. ...	1,050	Dec., 1949	\$6,786,200	+	\$2,633,399	26	\$33,795,958	+	\$11,248,537
	" (Bolivian Section)	66	Nov., 1949	Bs. 11,211,000	+	Bs. 1,920,270	22	Bs. 52,157,164	+	Bs. 8,295,289
	Salvador ...	100	Oct., 1949	c£68,000	—	c£14,000	17	c£13,000	—	c£16,000
Canada	Taltal ...	154	Dec., 1949	14,725	+	5,825	26	75,705	+	28,285
	United of Havana ...	1,301	11.6.49	\$231,311	+	\$14,746	49	\$13,733,928	—	\$4,659,951
Various	Canadian National†	23,473	Nov., 1949	14,853,000	+	84,000	48	151,818,000	+	3,068,000
	Canadian Pacific†	17,037	Nov. 1949	10,723,000	—	655,000	48	111,045,000	+	2,988,000
Various	Barsi Light*	167	Dec., 1949	29,928	+	4,425	39	267,533	+	19,875
	Egyptian Delta ...	607	31.10.49	21,874	—	5,055	31	385,264	—	12,682
	Gold Coast ...	536	Oct., 1949	217,578	—	497	32	1,625,728	+	213,529
	Mid. of W. Australia ...	277	Oct., 1949	28,391	—	3,076	18	109,866	—	3,847
	Nigeria ...	1,900	Oct., 1949	632,907	+	115,113	30	3,360,709	+	216,792
	South Africa ...	13,347	10.12.49	1,612,832	+	139,593	36	54,208,409	+	5,091,418
	Victoria ...	4,744	Sept., 1949	1,625,367	+	202,174	13	—	—	—

\* Receipts are calculated @ 1s. 6d. to the rupee

† Calculated at 83 to £1